

Understanding Transformations

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FOREWORD TO *UNDERSTANDING TRANSFORMATIONS*

The purpose of this pamphlet is to assemble articles and writings that may be relevant to understanding the implications of the policies stated by *NAVAL TRANSFORMATION ROADMAP: POWER AND ACCESS...FROM THE SEA* and *MEMORANDUM OF UNDERSTANDING: NAVY/MARINE CORPS TAC AIR INTEGRATION*.

Those two papers form the basis for adjusting the missions, organizations, and equipment of the Fleet and Fleet Marine Forces for future **contingences** and combat. While some adjustment will come in the form of new equipment, the greater part will be in new ways to think about how the various elements of naval forces work together in common purpose with the Army and Air Force to achieve national objectives.

The U.S. Fleet consists of five component elements: Submarines, Surface ships, Navy aviation including carriers, Marine ground forces, and Marine aviation. Marine Expeditionary Forces consist of ground forces and aviation forces organized as Air-Ground Task Forces for combat. But, because the link between the Force and the Fleet is often so necessary and close, it is also appropriate to think of Naval Expeditionary Forces that are made up of the same elements listed for the Fleet. One might think of the Fleet as looking toward maritime and open ocean tasks, while the Naval Expeditionary Force--same ships, aircraft, sailors, and Marines-- looks toward littoral and continental tasks.

The first article, *On Understanding Transformations*, is still in **draft** form, but may be useful as a historical example of a major transformation that has largely been ignored in the present dialogue. It uses the major change in General MacArthur, **from** being labeled as “reminiscent of the worst generalship of the First World War” in 1942 to the triumphant General of the Army MacArthur returning to Seoul in 1950, as a way of highlighting the growth of cooperation in military affairs, in general and in particular, the interactions possible in a littoral campaign. Many of the lessons of those times are just as valid today as they were half a century ago.

The second article, *Thinking About Warfare*, encourages moving away **from** thinking about combat in terms of the Army, Navy, and Air Force--and, by the way, there are also Marines--to thinking in terms of the five regimes of

war: Space, Land, Air, Sea, and Undersea. This also leads to consideration of the logistic activity that creates fighting forces in each of these regimes, and to using the forces in cooperation to establish shielded spaces, thus **minimizing** casualties.

The third article, *The Value of Timely Cooperation*, utilizes the same five regimes to expand consideration of the many ways forces can be helpful to others. Since each regime can accomplish tasks that are helpful to each of the other regimes and to other units in the same regime, there are 25 identifiable forms of cooperation. The tasks include not only combat but also intelligence gathering and dissemination, logistics, transport, and sensor positioning and communication relay. The four conditions for timely **cooperation—be there, be aware, be ordered, and be capable—**are discussed in terms of organization and base positioning.

The fourth article, *The Brigade Is Back!*, invites the reader to consider the Marine Expeditionary Brigade (**MEB**) as a Numbered Fleet element. A Numbered Fleet with a MEB has many more options for action, while a MEB that is part of, or backed by, a Fleet is, arguably, the most versatile land force available to the Joint Commander today. Fifth Fleet and Task Force 58 in Afghanistan operated in one of many ways such a Naval Expeditionary Force can be used.

If these writings evoke comments or questions, or warrant additional discussion, the author, Lieutenant General Philip D. Shutler USMC (ret), a Senior Fellow at the Center For Naval Analyses, is available at shutlerp@cna.org or 703-824-2592 or fax 703 824-2942.

ON UNDERSTANDING TRANSFORMATIONS

By Lt Gen Philip D. Shutler USMC (Ret.)

In late 1942 at the end of the campaign to cross the Papuan Peninsula in Eastern New Guinea, General MacArthur's leadership was characterized by one historian as "reminiscent of the worst generalship of the First World War." In September 1950, eight years later, General of the Army MacArthur visited Korea shortly after the **Inchon** landings to officiate as a triumphant pro-consul in the return of Korean President Syngman Rhee to the capital in Seoul. MacArthur was honored at that time as a military genius and properly so, since he had insisted on the amphibious assault in the face of almost universal opposition and warnings of impending disaster. The nation was on the threshold of a stunning and largely unexpected military victory.

This change in MacArthur provides revealing insight into one of the most far-reaching transformations in military history. It is not that he conceived of the changes and put them into effect himself; he most certainly did not do that. The senior commanders working for him, in coping with the many difficult situations that came up, developed solutions that MacArthur recognized as successful. He incorporated them into his way of making war, creating as he did so a distinctive style that led to a new way of thinking about campaigning.

Much has been written recently about Revolutions In Military Affairs. Andy Marshall has cited the change in the Navy created by the introduction of aircraft carriers in the mid-war years as "Revolutionary." Another such major change, or Revolution, occurred on the introduction of amphibious warfare by the Marine Corps and the Navy in the 1930's. Andy has also alerted us that Transformations occur not in the mechanical ways of making war, but in the way leaders think about the new ways, combined with the old ways, and use them to cope with the situations they must solve to achieve victory. A Transformation, then, may encompass a number of technical revolutions, and thus be much larger, more far reaching, and cover a timeframe of many years.

The importance of the MacArthur Transformation, to us, is not in the history of **what** happened, but in **why** it came about, and **how** the leaders of the time **prepared** for the possibilities and **coped** with the many difficult eventualities. If

we can understand the coping process by which transformations occur, we can, perhaps, apply the lessons to present day requirements.

The transformation apparent in General MacArthur came about not only from the many technical advancements of the inter-war years-ships, aircraft, landing craft, powerful trucks, tanks, and wireless telegraphy-but also from the way senior leaders used these capabilities to solve the problems presented by a strong Japanese force deployed on many island fortresses over hundreds and sometimes thousands of miles. The changes evolved throughout **WWII** and continued into the first 6 months of the Korean conflict.

A transformation has three components. There is a beginning state of thought, followed by a process of assessment of new technology and ideas, coupled with experiment in their use, thus leading to an end state of thought that combines both some new and some old techniques in a new way of thinking and acting. The beginning state as we entered World War II was essentially service oriented and dominated by three writers on military strategy:

- Clausewitz had observed the **Napoleonic** campaigns and formulated the guiding principles of land warfare,
- Mahan** had observed the effect of the British Navy on world affairs and formulated the principles of war at sea,
- Douhet, though he could not observe **airpower** in action, projected the future possibilities and laid the intellectual groundwork for the development of airpower.

These “prophets” had strong followings in the soldiers, sailors, and airmen at the time. Their writings had, and continue to have, validity for some circumstances, but the doctrines they proposed were inadequate for many situations, and the on-scene commanders had to adjust and modify doctrine and often use forces far “off design” to cope with events as they appeared.

During the early part of the war up to the latter part of 1943 various actions taken by MacArthur’s subordinate commanders led to the major changes in thinking and procedures that made up the MacArthur Transformation. For example, General Kenney, his senior airman, pioneered movement of ground forces by air during the attack on Lae. The major change occurred, however, in the Island Campaign conducted by Admiral Halsey, first in the South Pacific Theater Under Admiral Nimitz, then in the South West Pacific Theater under General MacArthur (Figure 1).

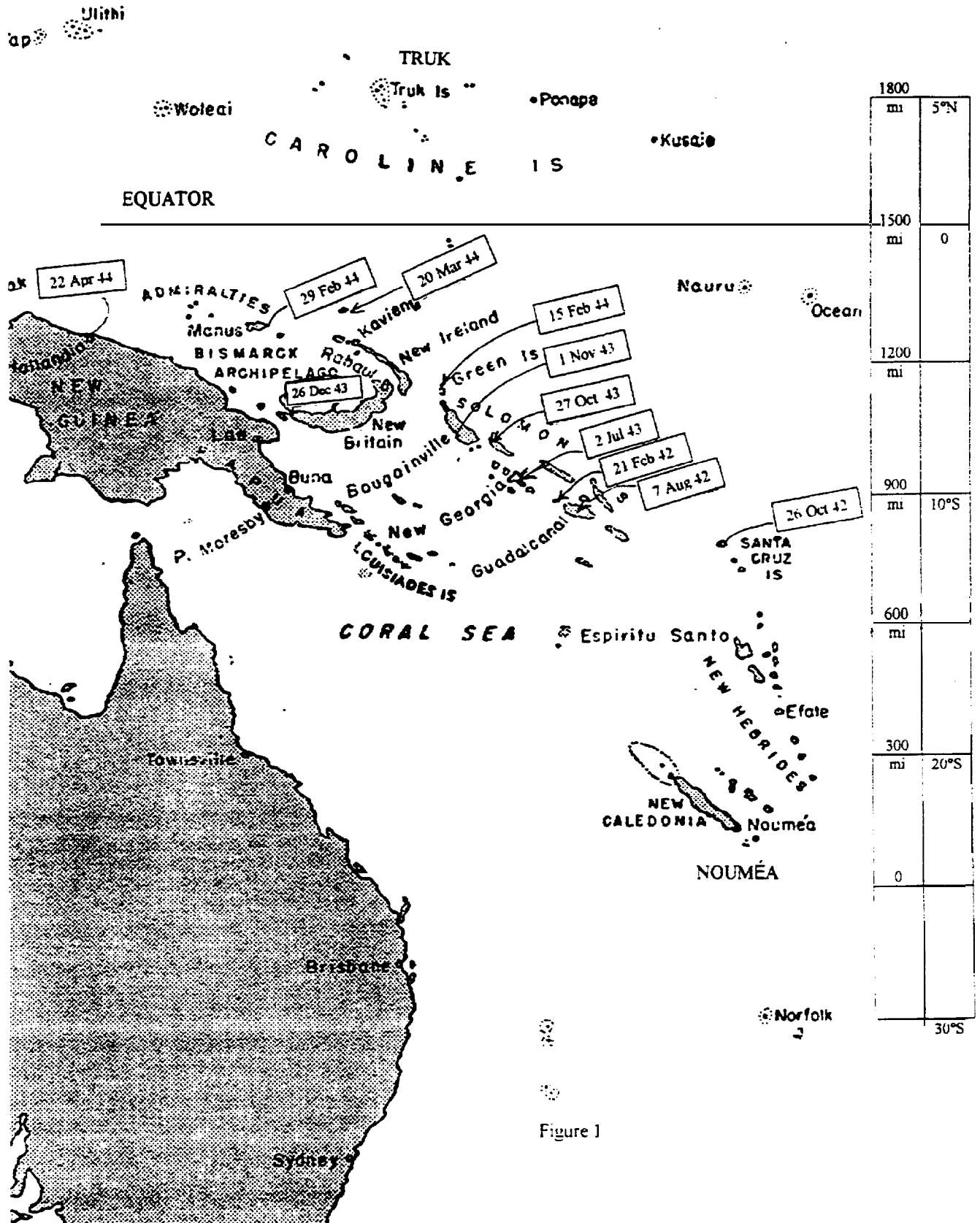


Figure 1

While Halsey was still part of Admiral **Nimitz** command, Major General Vandegrift, commanding First Marine Division, led the successful seizure and defense of Henderson Field on Guadalcanal, August through November 1942. Historian Fletcher Pratt credits Vandegrift with inventing “a new system of **war**—the system of seizing a beachhead on which an airfield could be constructed, setting up a cordon perimeter defense around it, and then proceeding to the next step. The process was repeated in endless variations throughout the southwest Pacific—at Bougainville, Cape Gloucester, Hollandia, Aitape, Geelvink Bay, Mindoro.”

Vandegrift found Clausewitzian use of ground forces inappropriate and pioneered the use of the Marines to seize and hold airbases. He said, in effect, that the mission of holding Henderson Field was far more important than defeating the land forces on the island.

This was not a new idea to him. In his memoirs he describes the actions taken by the Marine Corps in 1939. One of the justifications for increased end-strength was for seven defense battalions, described as “unsinkable aircraft carriers.” He goes on to relate the early acquisition of radar by both the Navy and Marine Corps. “Late in 1940, when the Commandant was on an inspection trip, Rear Admiral Leigh Noyes in charge of Navy ordnance stopped by my office. He thought it a good idea to equip his destroyers and our defense battalions with some of this new and still very secret radar. Together we pleaded the case to Admiral Stark, each of us gaining four of the old SCR-264 sets—this was the beginning of radar in both the Navy and Marines.”

In describing his meeting with Vice Admiral Halsey and other senior commanders at Noumea on 23 October 1942, when the Guadalcanal campaign seemed all but lost, Vandegrift writes, “I reviewed the campaign to date. ---I impressed on him the poor physical condition of my command. --- I told him that to hold we simply had to have air and ground reinforcement. --- Beside fighter and dive-bomber squadrons we needed at a minimum the rest of the Americal Division and another regiment of the 2d Division. ---After Harmon and Holcomb vigorously defended my statements, Halsey asked [Rear Admiral] Turner for his views. ---

Halsey abruptly turned to me, “Can you hold?”

“Yes, I can hold. But I have to have more active support than I have been getting.”

He nodded. “ You go back there, Vandegrift. I promise to get you everything I have.” (Figure 1)

Thus did Admiral Halsey, a graduate of The Army War College as well as The Naval War College, contrary to **Mahan** Doctrine that would require the ships of the Fleet to be held out of action until they could be massed to defeat the enemy fleet decisively, commit the total effort of the Navy and all the forces at his command to holding Henderson Field. On that very day the Japanese and American admirals were moving through the preliminaries leading to the Battle of Santa **Cruz** where *Hornet* was sunk in the early hours of October 27th. *Enterprise* also took damage and went to Noumea for repair.

Two other leaders were prominent in these actions. Brigadier General Roy Geiger USMC was the Commander, First Marine **Aircraft** Wing, and the first leader of the Cactus Air Force, an ever-changing combination of Marine, Navy, and Army Air Force squadrons that would fly from Henderson Field. During the first months of the war, the Marines and Navy were equipped with the same models of aircraft, hence had common maintenance, training, and supply. Noting this, Rear Admiral John **McCain** insisted that Navy squadrons be positioned forward with the Marines. The result was the creation-in-fact of an “unsinkable aircraft carrier.”

At the end of the fight in the middle of November 1942, when *Enterprise* was the only carrier remaining in theater, and she couldn't cycle her forward elevator, virtually all the aircraft the Navy and Marines could muster were flown to Henderson Field. A heavy Japanese cruiser was sunk and three others damaged. Of more immediate importance to the Marines, eleven Japanese transport ships were destroyed and an entire Japanese Army Division ceased to exist in one 24-hour period. The Japanese abandoned the mission to retake Henderson Field, and the Thanksgiving Day battle that might have occurred never happened. Just so did the aviators, Navy and Marine, repay---in full measure and with cup running over-- the gallant Marines and soldiers who had defended the “unsinkable aircraft carrier.”

By the imaginative, coping actions of these officers, the US Fleet, unique in all the Fleets of the world, was transformed from a Fleet of ships only to a FLEET WITH A TACTICAL FOOT ASHORE. A pattern for littoral warfare was thus established:

--The ships and aircraft would be employed to create sea control and air superiority.

- An amphibious assault would be executed to seize an expeditionary port and airfield.
- Engineers and **CBs** would be put to work improving the airfield and port.
- The aircraft base and port facilities would be moved forward. When the facility was ready, the aircraft and ships would be moved forward so that air superiority and sea control could be extended.
- The process would be repeated until our forces could be positioned close enough to enemy centers of political power to force a change.

After the Guadalcanal Campaign, Halsey's forward movement took him into the Southwest Pacific Area and under General MacArthur's command. The above procedure of attacking directly at the airfield was used successfully at Munda in the summer of 1943, but with very heavy casualties in the ground forces.

At Bougainville, a few months later in November 1943, a new and very important change in thinking occurred; The plan would be not to attack directly to seize an airfield or port, but to land where the enemy was weakest and not expecting attack, develop an area deep enough to deny attack by artillery, maintain that position without trying to "conquer" any more territory, and build an expeditionary airfield and port from scratch. As soon as the airfield could host aircraft, the fighters would be flown forward so they could effectively escort the bombers, flying from main bases further back, attacking Rabaul.

The pattern was repeated again a couple of months later when New Zealand land forces were transported by III Amphibious Force to attack Green Island and Marine Corps fighters were moved forward to support bombers attacking Kavieng, a Japanese base some 150 miles north of Rabaul. Neither Rabaul nor Kavieng were ever attacked on the ground, and a Japanese Army Force of more than 100,000 troops remained out of action until the end of the war.

The above noted historical actions are largely examples of campaign level cooperation. It is useful and interesting to consider actions that displayed the growing capabilities for tactical cooperation, as well. Two stand out as clear departures from prior ways of thinking, thus can contribute to our understanding of the transformation process. The first was the growing capability to fight a sea-land battle all-of-a-piece shown at the attack on the Admiralties Islands, an archipelago some 350 miles west of Rabaul and 250 miles north of Cape Gloucester, in February and March 1943. The second was the pioneering action of then Lieutenant Colonel Keith **McCutcheon** USMC in developing Close Air Support in

cooperation with the Army in the Philippines, beginning in October 1944. Out of this effort came the capability to fight a land-air battle all-of-a-piece.

The purpose of the Admiralties landings was to seize **Seeadler** Harbor for use as a substitute for Rabaul. It was thought that the enemy had abandoned the islands based on aerial intelligence reports, thus justifying a reconnaissance in force to be executed **four days** from the decision date, on a beach over 300 miles from the departure base on the Papuan Peninsula. Talk about speed of response! Recognizing this to be a bit risky, both General MacArthur and Vice Admiral **Kinkaid** embarked in *Phoenix* and went along, but not to interfere with Rear Admiral Barbey who commanded the expedition.

In reality, some 4000 Japanese troops remained on the islands. The attack group consisted of 1000 soldiers of the 5th Cavalry embarked in 8 destroyers and 3 APDs. The reader will note that troop strength was less than one tenth of the three or four to one expected for amphibious assaults. Risky, Indeed! The saving feature was the close tactical cooperation between the destroyers and ground forces that had been developed by Admirals **Kinkaid** and Barbey working with the Army leadership under General Krueger.

The landings were made on the far eastern beaches where the conditions were least advantageous to the attacker, and, of course, where they were least expected. When the Japanese made the expected counter-attacks, they were met with such precisely timed and accurately delivered naval gunfire that Major General Swift, CG First Cavalry Division, was prompted to report: --

The bald statement, "The naval forces supported the action," appearing in the chronology, is indeed a masterpiece of understatement. When asked regarding the effect of naval gunfire support the commanding general of one brigade made the laconic reply, "The Navy didn 't support us, they saved our necks!"

Samuel Eliot Morison wrote in a footnote in *Volume 6 of History of United States Naval Operations in World War II—BREAKING THE BISMARCKS BARRIER*,

"Admiral Kinkaid told us that this performance so impressed General MacArthur that he (Kinkaid) thereafter had to argue on the limitations, not the capabilities of naval gunfire."

Turning to the development of Close Air Support (CAS) in the Philippines, Col. **McCutcheon** went beyond the conventional theories of **airpower** as stated by Douhet and subscribed to by almost all the airmen of the time, in that he sought to create a true air-land battle force. To do this he recognized the over-riding need

for **timely, safe, accurate** air attacks, delivered exactly where and when the ground commander needed them. He did this by positioning carefully trained Air Liaison Parties (today called Forward Air Controllers [**FACs**]) with battalions in contact, and Air Support Parties (today called Direct Air Support Centers [**DASCs**]) with division headquarters. He demanded that his **FACs** control the missions right down to the actual drop and that they be authorized direct liaison with the ground commander. He changed the approval process from the time consuming method of request up the ground chain of command, then execution down the air chain of command, to automatic approval if not countermanded. The aviation personnel on site with the ground units were given de-facto command of a limited number of air group assets in the interest of insuring that the attacks would be timely. He got them radios to talk to attack aircraft and to stay in contact with ground as well as aviation headquarters.

The safety problem was solved by two simple procedures:

No contact with the FAC, no drop.

If FAC authorized a drop, the pilot can and will do so, but may, if he sees a safety problem, refuse to do so until the problem is cleared up.

Chronologically the development of CAS occurred during the MacArthur campaign for the Philippines, but it played only a small part there. Five years later in Korea the doctrine had matured in the Marine Corps. We will return to it in more detail there.

This pattern of campaign cooperation, pioneered by Vandegrift and Halsey, and sea-land tactical cooperation, developed by Admirals **Kinkaid** and Barbey and General Krueger, was adopted in the Southwest Pacific Theater to move to the Philippines.

Senior leaders were responsible for these actions. Admirals **Kinkaid**, **Barbee**, and Fechteler led the Navy effort, Generals Kenney and Whitehead the air campaign, and Generals Krueger and Eichelberger the land forces. Brigadier General Casey created and led the Amphibious Engineering Brigade that built the infrastructure to support combat actions. These officers, along with MacArthur, share credit for using and expanding the Bougainville Model.

One can look at the campaign map (Figure 2) of the Southwest Pacific and see fighters shielding bombers creating air superiority, ships establishing sea control

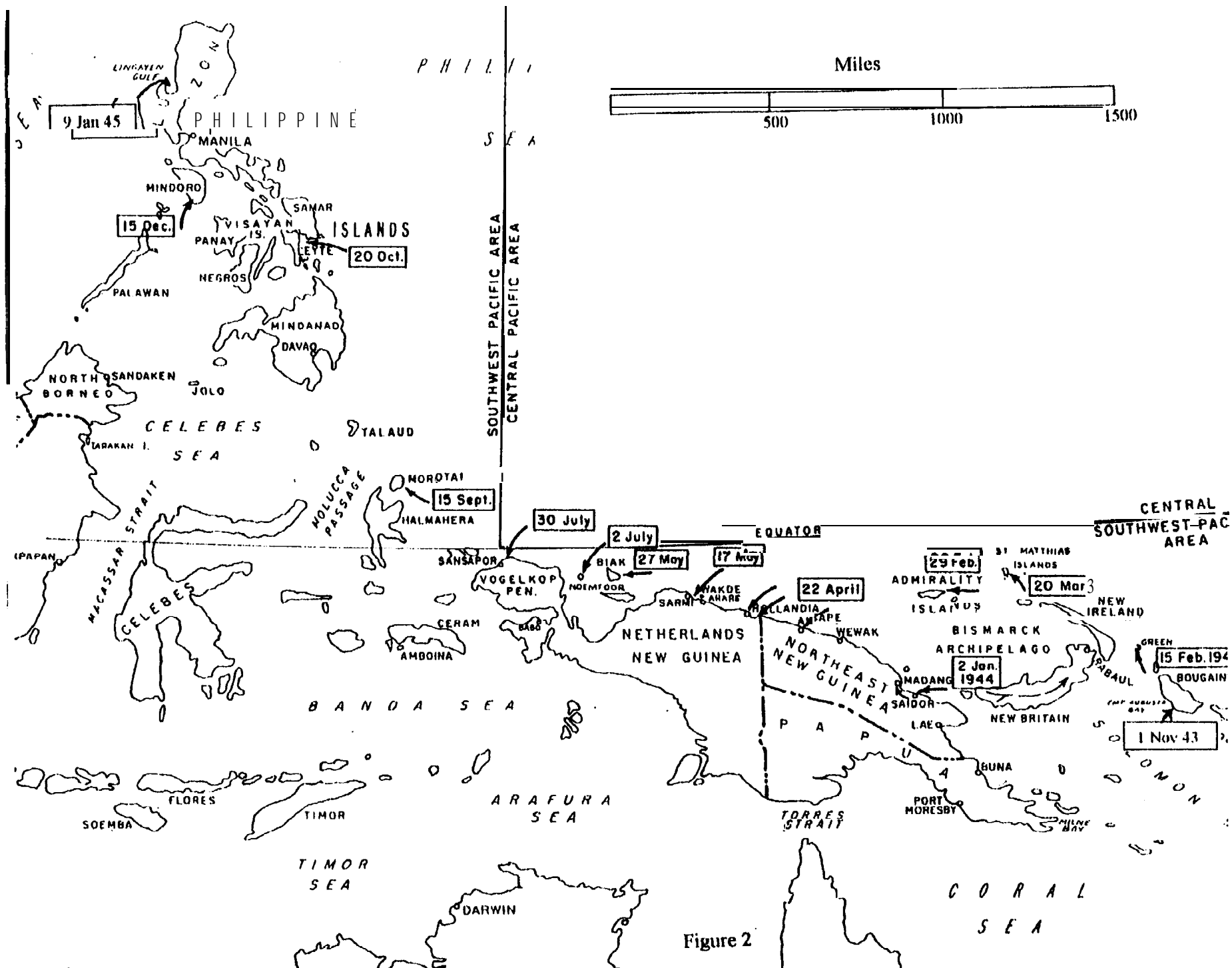


Figure 2

around the next landing area, the amphibious operation being executed, the fighter base being constructed inside the insertion perimeter, and the base advancing at about 200 hundred miles a month.

Before leaving this theater and going to Korea it is important to revisit our purpose of understanding ~~why~~ how the transformation took place. a i r l y straightforward. The array of threats and disposition of enemy forces was unlike any we had faced before. Enemy forces were positioned on island fortresses, many where they had been digging in for months and, sometimes, years. They were equipped with modern weapons, some superior to ours, and used them well in tactical actions. They were well trained, at least at first, and well motivated to the point of fanaticism. It was essential that we develop new ways of thinking to overcome the initial advantage of position and strength.

The how was much more complex. Perhaps the most direct approach is to **construct** some words in our vocabulary to facilitate thinking in new ways. To do this we can start with a familiar idea, **Air Superiority**, and expand our thought from there. Closer to our sources of air power we can have a condition of **Air Supremacy**. Right over our own bases **we can** have **Air Dominance**. To round out this set of words, we can be faced with **Air Parity** and **Air Inferiority** at some points closer to the adversary's source of airpower.

These same conceptual words can be applied to the other regimes of warfare. As with **Air**, they can be applied to **Land** and **Sea**. Because **Undersea** warfare is so different in nature it should be included as a **regime** also. During the time of the MacArthur Transformation, **Space** was barely on the horizon, but today it is important (Figure 3).

TRANSFORMATIONAL RELATIONSHIPS

← 1800 miles →

NOUMEA-ESPIRITU SANTO-GUADALCANAL-MUNDA-BOUGAINVILLE-RABAU-~~KA~~ VIENG-TRUK

	<i>DOMINANCE</i>	<i>SUPREMACY</i>	<i>SUPERIORITY</i>	<i>PARITY</i>	<i>INFERIORITY</i>
<i>SPACE</i>					
<i>AIR</i>					
<i>LAND</i>					
<i>SEA</i>					
<i>UNDERSEA</i>					

SAFE

EXPEDITIONARY

DANGEROUS



Figure 3

The reader is invited to return to the very early days of the campaign to examine two combat actions that provide illustrations of this way of thinking. The break-neck urgency to seize Henderson Field was occasioned by the fact that, if the Japanese could base long-range bombers there, the positions at Espiritu Santo, 500 miles to the south, and even Noumea, 700 miles to the southwest, could come under air attack. It was a come-as-you-are, devil-take-the-hind-most affair carried out by a bob-tailed Marine division on half a shoestring of resources. But that timely assault, and the subsequent four regime defense of the airfield denied the Japanese the logistic facility for launching aircraft, thus creating Air Superiority over Espiritu Santo and Air Supremacy over Noumea.

The interactive nature of establishment of Land Superiority is illustrated by another action that occurred very early in the campaign. At midnight, August 8th, a relief force of Japanese troops embarked in 6 transports was intercepted just south of Rabaul by U.S. submarine S-38. She promptly sank one of the transports, *Meiyo Maru*, a key vessel of the expedition. The loss caused VADM Mikawa to recall the other five transports.

It is not appropriate to rewrite history by exchanging silver threads with gold; still, considering this landing force would probably have landed on the 10th or 11th of August within a day or two after one of the greatest naval disasters of the war (8 ships sunk, 1270 sailors killed, 709 wounded), it could have spelled real trouble for the Marines. At that time the Marines had only the lead elements of two regiments ashore, and the transports had not yet returned to unload the remainder of their equipment. Desperate times could have deteriorated into defeat.

As land forces holding Henderson Field had created Air Superiority over Espiritu Santo, 500 miles to the south, by denying the Japanese air forces access to Henderson Field, so undersea forces-- submarine S-38-- insured at least temporary Land Superiority on Guadalcanal, some 400 miles south of the attack, by denying the Japanese land forces the sea-going transportation to get there.

Returning to Bougainville, we can see that just prior to the landing we had achieved air superiority and sea superiority. The landings in November of 1943 were made in an area remote enough from the enemy sources of land power that land superiority could be established relatively quickly and maintained by the flow of force from the sea. Additional forces gave us Land Supremacy along with Air and Sea Supremacy, creating an area on land where it had become safe enough to build an airfield and accomplish the logistic tasks needed to sustain the force.

By this time in the war the essential nature of logistics--well over 90% of all activity in a war zone is logistic, and if the activity of building the infrastructure is included, the percentage is over **95%---** was apparent to all the leaders. While at the tactical level of war, logistics is considered secondary to tactics, at the campaign and strategic levels tactics are directed specifically toward creating areas where logistics can be accomplished safely. The landings on Bougainville--an area thought by many to be far too close to the still active airfields and port at **Rabaul--**were made specifically to create a fighter base close enough to let fighters escort bombers and minimize aircraft losses. The timing of the landings was dictated by the need to stop the bomber losses as soon as possible.

To put these ideas in a slightly different context, there are safe areas where we hold Dominance and Supremacy in all regimes; there are dangerous areas where we hold only Parity or even Inferiority in some regimes; and there are expeditionary areas where we hold Superiority in some ~~regimes~~ regions we can conduct tactical operations relatively safely if our plans and execution are designed to create shielded spaces for our tactical forces in all regimes at the time of engagement. When we are strong enough through reinforcement and forward flow of materiel to improve our position from Superiority to Supremacy we can move the logistic activity forward.

There were, then, three major conceptual adjustments that contributed to the MacArthur Transformation during WWII. First, largely through the forethought of Vandegrift, the flexibility of Halsey, and the airmanship of **McCain** and Geiger, the South Pacific Force moved away from the rigidity of Land Power as stated by Clausewitz, Sea Power as stated by **Mahan**, and Air Power as stated by Douhet, toward Battle Area Dominance through the timely campaign level cooperative effort of all forces.

Second, sea-land tactical cooperation, as practiced by **Kinkaid**, Barbey and Krueger, was instrumental in minimizing casualties and maximizing the effectiveness of limited forces.

Third, the appreciation of logistics and the reversal of thought from logistics serving tactics to tactics being executed specifically to serve logistics came to them early on. One could say of them they became truly professional in the sense that "Amateurs talk about strategy and tactics, but professionals talk about logistics."

Turning now to the Korean War, it is perhaps understandable that General of the Army MacArthur could have the confidence to insist on landing at **Inchon**, despite

the obvious disadvantages. He was by that time by far the most experienced littoral warfare officer still on active duty. Taking risks in the interest of timely gains was a trademark of his way of campaigning. From Bougainville in November 1943 to Lingayen Gulf in Northern Luzon in January 1945, he made 14 major insertions from the sea, using all four services in imaginative and out-of-doctrine ways, covering a distance over 3000 miles. **Inchon**, in September 1950, was the 1 5th in the series.

The pattern in Korea was largely the same as that of the Southwest Pacific with the exception that air-land cooperation, as developed by **Col McCutcheon** in 1945 had become doctrine in the Marine Corps and Navy. This way of fighting made an important contribution in the actions at the Pusan Perimeter and Inchon-Seoul, and it was to play an absolutely vital role during the Chosin Reservoir campaign in November and December 1950. That, however, is another story and goes beyond the scope of this paper. The ability of the Marines to create air-land battle teams using both Marine and Navy aircraft gave the First Marine Brigade exceptional fire power during the days when the Pusan Perimeter was anything but secure during the dark days of August 1950. The aircraft stayed aboard the carriers, but still made time on station requirements.

During the **Inchon** Assault, the aircraft continued to operate aboard ship and met ground force time lines, but some three or four days into the action the aircraft were phased ashore to Kimpo Airfield, an action that put them within 30 miles of most of their targets, and, more important, allowed response times to urgent requests of less than 10 minutes.

One of the ways transformation can be pursued is by emulating the command arrangements pioneered by the Marines in CAS--positioning elements with true command authority in requesting command headquarters as distinct from assigning temporary liaison officers without command authority. In this way the whole local action--all five regimes worth, if necessary--can be accomplished as one fight with mutual shielding and timely, safe cooperation.

In conclusion, we can note that there were three main aspects of the MacArthur Transformation:

-- In campaigning, the services planned and fought together to shield expeditionary areas against attack in all regimes. Logistics facilities were moved forward and logistic activity accomplished in relative safety.

--In tactical actions, timely cooperation between forces in different regimes showed that a relatively small force could fight outnumbered and win.

--Logistics was recognized for what it was, by far the largest part of the military effort.

The old way of thinking---Land Power, Sea Power, and Air Power--- gave way in the MacArthur Transformation to a new way of thinking--- Cooperative Campaigning. A start was made on tactical cooperation as well.

The conflict between these ways of thinking has continued to this day, but gradually the services are recognizing how dependent they are on each other and the urgent need to act jointly. This is evidenced in new ways of talking **about** future action. The current Chief of Staff of the Air Force advocates collapsing the time from detection by a sensor to response with a weapon, including those times when the sensor is in other regimes. The Navy is well along in developing the concept of Network Centric Warfare. In this way we are developing the thinking tools of Transformation as well as the mechanical and electronic tools of Revolutions in Military Affairs.

Thinking about Warfare

By Lieutenant General Philip D. Shutler USMC (ret)

Marine Corps Gazette November 1987

Thinking About Warfare

by LtGen Philip D. Shutler, USMC(Ret)

Changing technology alters the pattern and form of warfare. To accommodate change it is necessary to think in new ways and then to adjust doctrine and modify organizations in order to fight in new ways. My purpose is to offer a fresh approach to assess change and to determine what should be done about it.

It is not that change is unknown to the military; a great deal of research and subsequent application of new technology in weapons systems is actively sponsored by the Services. What is not clear is the way in which new *and old* technologies can be combined by an imaginative enemy or what steps should be taken in technical development, policy, doctrine, training, and organization to counter those combinations.

We are now more than 40 years away from the large scale conflicts of World War II and over 10 years out of Vietnam—years that have seen extraordinary advances in technology and many modifications in military capabilities, not only to wage large-scale war but also to engage in small conflicts, and years that have seen major changes in political alignments, **particularly** in the Third World. This situation presents **our** forces with a very complex set of tasks. At the high end of the scale, we must prepare for major war with the Soviet Union. At the low end we must **pre-**pare to counter urban **terror-**ism and guerrilla warfare, sometimes indigenous, sometimes imported, and often backed by a major power. In the middle we must be prepared to meet fairly sizable conventional forces often using **firstline** equipment from major **powers**—sometimes our own!

Technical Change

Each year brings a new crop of technical changes that soon **find** their way into military capabilities. Figure 1 shows some of the ongoing technology changes and the derivative results. New satellites and sensors imply we will see more targets. The combination of satellites and communications indicate we can tell more people about the targets. Sensors plus computers and lasers indicate we can hit more targets. Weapon fusing and warhead advances imply we can kill more of those hit

Vertical and short takeoff and landing aircraft (VSTOL) and attack helicopters will allow closer air-ground coordination. Heavy lift helicopters and big transports mean we

can support engaged forces much more quickly at much greater ranges. High speed submarines can outmaneuver surface ships, particularly merchantmen. Air cushion landing craft (LCAC) and tilt-rotor aircraft (Osprey **MV-22**) give amphibious forces a much wider operating area.

The reader can no doubt add many more technical advances and extend the list of innovations and interactions. As a start on such a list, one can consider:

- Remotely piloted vehicles (**RPVs**)
- Low-signature aircraft
- Sea-skimming, antiradiation, and cruise missiles
- Very precise navigation systems

Anything that is hot, cold, moving, or otherwise contrasts with its background is readily detectable. Anything that radiates electronic energy, like a communication transmitter or a radar set, is not only detectable but the radiation often carries signatures that can reveal not only our own position but also order of battle and force composition. Concentrated and massed forces tend to have known, **fixed** geographic locations or prominent signatures (visual, infrared, electronic, seismic, magnetic, etc.); hence, they are vulnerable. And like rain and sunshine these conditions “fall equally on

THE EFFECT OF TECHNOLOGY ON WARFARE

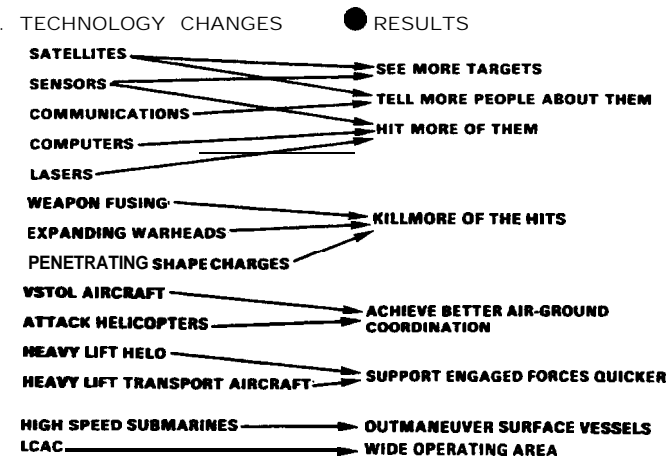


Figure 1

the just and unjust.”

Consider, if you will, some combat examples:

- A sea-skimming missile **fired** from land, **directed** through real-time overhead intelligence. Coastal artillery is back!
- The current crop of surface-to-air missiles (**SAMs**), both land based and sea based. The skies have become very unfriendly indeed.
- A flight of **RPVs** guided by very precise navigation systems and using infrared sensors with data **downlink**. Undetected night maneuver in the forward area is a thing of the past.
- The movement of battalions of artillery at night by heavy-lift helicopters equipped with night vision devices. Any artillery piece within a **50-mile** radius could be positioned for coordinated massed fire. If the other side does use night maneuver and masses troop units in an assembly area, they could be brought under such **in-**

tense artillery fire they might not make it to the line of departure, much less execute a coordinated attack.

This short list of combinations and tactical examples barely scratches the surface. What is needed is a systematic way to display the combinations and analyze the possible cumulative effects, and to formulate plans to use these capabilities as well as ways to counter them. The following section is designed to fill this need.

Regime/Aspect/Mode/Shield Analysis

The Regime/Aspect Matrix

To appreciate the combined effects of technology changes, we need to view our armed forces in a different way than the usual breakdown of Army, Navy, Air Force, Marines. For this purpose, it is useful to look at (Figure 2) the regimes of combat (space, land, air, sea, undersea) and the aspects of combat (production, logistics, operations, and tactics).

Only in the tactics aspect is shooting or gathering combat information a possibility. The other aspects, by definition, imply guns and missiles tight and master arm switch off. Maneuver for tactical advantage would be considered in the tactics aspect, but other movement would be in the operations aspect. The production aspect includes creation of new forces both by manufacturing of equipment and training of personnel and units. Activities such as administration, communication, and command are included in each aspect.

The space regime has few offensive or defensive weapons at the moment, but satellites and space vehicles do play a large role in intelligence and communication and may be given combat capability in the near future.

Paths to Combat

The regime/aspect matrix is useful to trace the paths to combat. Everything that goes to war must move from one square to another. There are, of course, thousands of such paths, but two have been chosen to illustrate the ways in which the matrix can be used.

In the matrix depicting Country Blue (Figure 3), forces in the path leading to an amphibious landing start with equipment in production and troops in training (land regime/production aspect), move to embarkation (land/logistics), conduct a rehearsal (sea/production), reembark and repair equipment (sea/logistics), steam to the objective area (sea/operations), and make a water and air assault (sea/tactics, air/tactics, land/tactics).

In the matrix depicting Country Red (Figure 4), the path shows a submarine going on patrol. The sub starts tied up in port, fitting out and conducting training (land/production), then takes on stores and accomplishes other predeployment logistics (land/logistics). The sub then moves out the channel on the surface (sea/operations), submerges for its deployment (undersea/operations), and is then in position to go tactical (undersea/tactics), or possibly to conduct training (undersea/production), or to surface at a tender for support (sea/logistics).

While individuals and units and equipment are on the paths, they are subject to observation and attack and are usually not able to defend themselves. The ground forces in the troop ships executing the amphibious assault are vulnerable to submarine and air attack in ways that make the

REGIME/ASPECT MATRIX

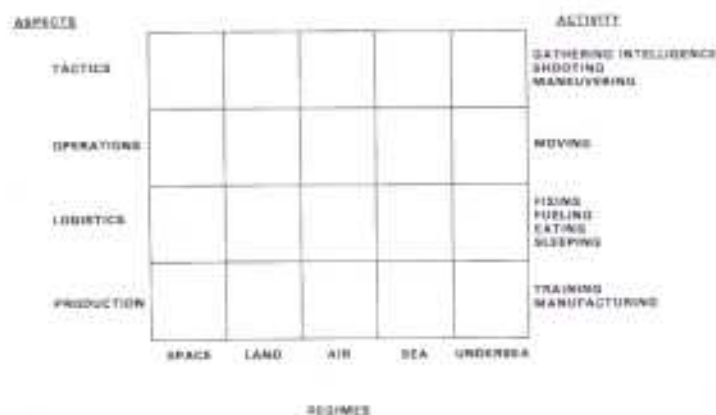


Figure 2

COUNTRY BLUE PATH TO COMBAT AMPHIBIOUS LANDING

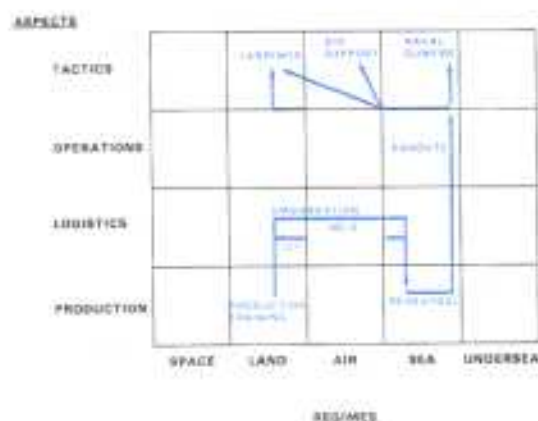


Figure 3

COUNTRY RED PATH TO COMBAT SUBMARINE PATROL

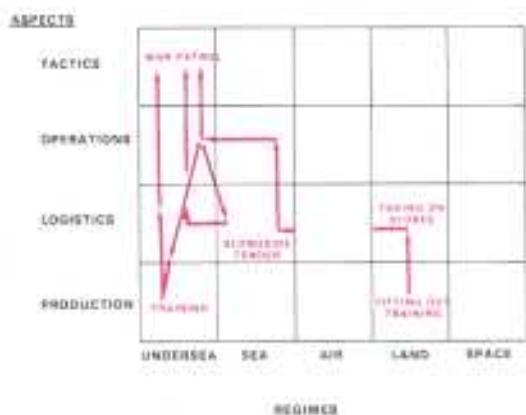


Figure 4

FIVE SYMMETRIC TACTICAL MODES

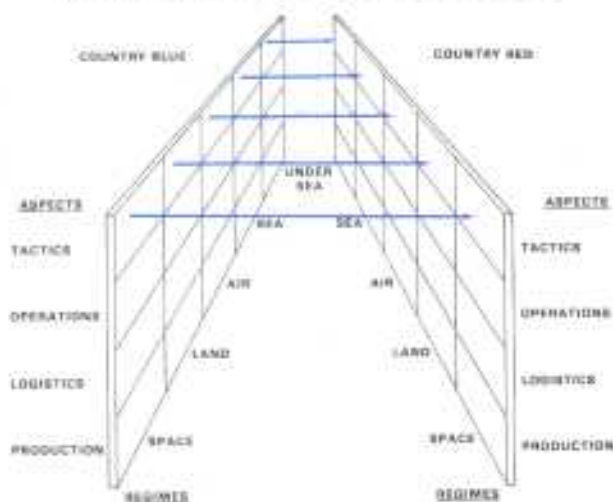


Figure 5

FIFTEEN SYMMETRIC NONTACTICAL MODES

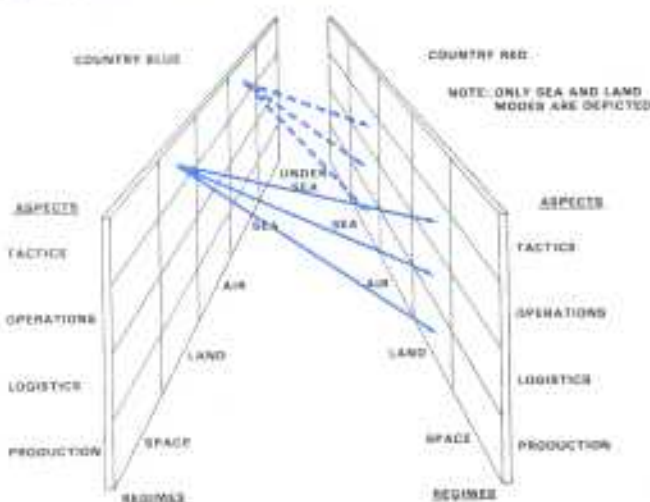


Figure 6

TWENTY ASYMMETRIC TACTICAL MODES

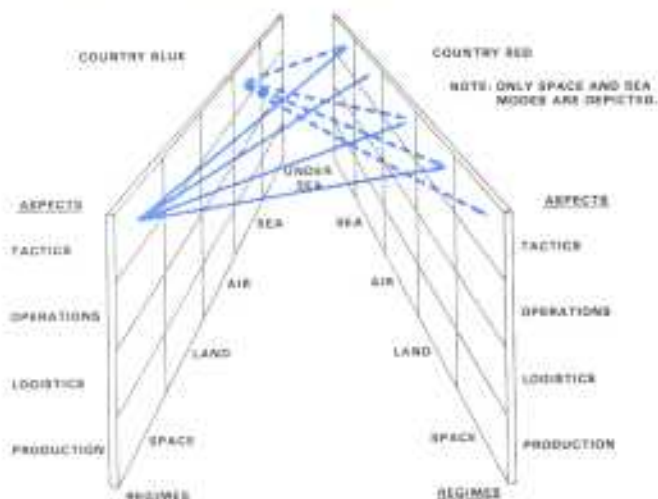


Figure 7

number of troops and the state of training meaningless. Similarly, while in port the submarine is subject to land and air attack and, while en route on the surface, to air and sea attack. Again, the state of training of the crew and the undersea capability of the sub make little difference.

Modes of Combat

If we look at two opposing forces, Blue and Red, we can display the modes of combat. There are, by definition, only 5 tactical blocks to shoot from but 20 blocks to shoot at; thus there are 100 (5 x 20) modes. Five of the modes are symmetric tactical (Figure 5); that is, forces are engaged with *like* forces that *are* deployed and ready to shoot back (land vs. land, etc.). Fifteen of the modes are symmetric nontactical (Figure 6); forces are engaged with *like* forces that *are not* deployed and *not* ready to shoot back (land attack on land logistic installation, etc.).

Twenty of the modes are asymmetric tactical (Figure 7); forces are engaged with *unlike* forces that *are* deployed and ready to shoot back (air vs. land in close air support, etc.). The remaining 60 modes are asymmetric nontactical (Figure 8); forces are engaged with *unlike* forces that *are not* deployed and *not* ready to shoot back (air vs. land operational, such as the interdiction of troop trains, etc.).

With the modes displayed in this fashion, the effects of new technology and new weapons become clearer. While new technology has increased the lethality of the symmetric tactical modes to a significant degree, the lethality in the asymmetric and nontactical modes has increased by many orders of magnitude. Simply put, the combination of capabilities inherent in technological advances has given many of the asymmetric and nontactical modes ferocious killing power at great distances. Forces are at great and increasing hazard to attack from different regimes for which they are ill-prepared, and there are fewer places to hide.

Combat Shields

The above observations lead us to the need for combat shields that can deny an enemy the opportunity to shoot at a force or otherwise disrupt its operations.

Combat shields can be generated by short-term tactical

SIXTY ASYMMETRIC NONTACTICAL MODES

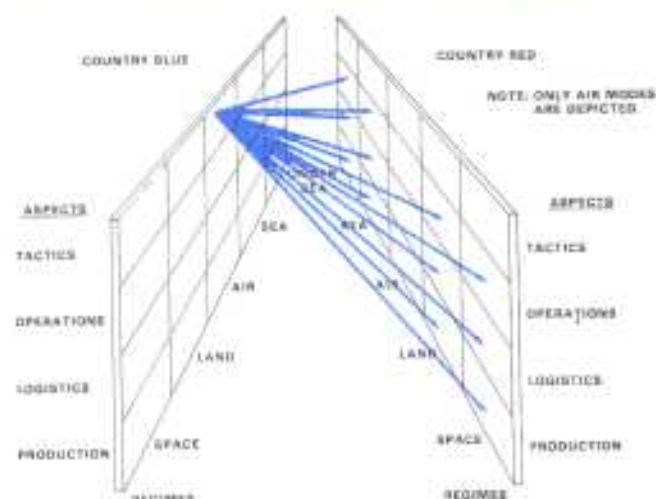


Figure 8

actions or by longer campaigns, but they all have three things in common:

- They are active fighting shields of fire that are interposed between our forces and the threat, to include attacking the threat at the source or on the paths.
- Timing and position related to our own actions and location are of major importance. A battle that might be classified as a tactical loss but that is at the right time and place to protect the main force is a successful shield. The Battle of the Coral Sea in May 1942 was so successful as a combat shield defending Gen MacArthur's forces in New Guinea and Australia that the ship losses and tactical outcome are barely remembered.
- The measure of success is the survival of the shielded force. Enemy attrition statistics and territory taken in shielding actions, though still important, are secondary.

If we consider the two paths described previously and arrange them in opposition, the amphibious force is seen to be vulnerable to submarine attack any time it is at sea in range of submarines. To defend the amphibious force, the theater commander would not just send along some direct support submarines for screening near the task force, he would mount an antisubmarine warfare campaign using the surveillance and attack forces from all regimes to attack submarines in production, in port, in training, en route, and especially in tactical deployment (Figure 9).

In effect, the all-regime ASW campaign shown would generate a shield of fire behind which the task force could move without undue risk to undersea attack. The combat shield in Figure 9 is repeated as the underwater ASW barrel in the sketch of Shields at Sea shown in Figure 10. To ensure safe passage, however, the theater commander would also need to provide an antiair warfare (AAW) shield by mounting an antiair warfare campaign specifically organized to deny enemy aircraft access to the airspace near the task force. Similarly, an antisurface warfare (ASUW) shield and, in the future, an antispace warfare (ASPW) shield would be necessary.

As the task force approaches land and puts land and air forces ashore, the theater commander must also be concerned with attack from land forces and land weapons. Once ashore, the familiar force beachhead line (FBHL) would be the tangible evidence of frontline forces on the ground, but the range, accuracy, and lethality of modern ground weapons demand that the FBHL concept be expanded to a five-regime antiland warfare (ALW) shield (Figure 11).

This sketch is our objective, the high ground toward which the discussion of technology combinations, regimes, aspects, paths, modes, and shields has been leading. Successful military operations depend on maneuver and aggressive action, but maneuver with shields in place and sometimes movement of the shields along with maneuver of the "mission force."

While it is useful to break the analysis down into "thinking-size chunks," combat itself comes "all of a piece." To take advantage of the leverage offered by asymmetric and nontactical modes both in mission and shielding actions, a commander needs directive authority over resources from all the Services and the intelligence community. The need will exist, therefore, to establish fighting theaters.

ANTISUBMARINE WARFARE SHIELD

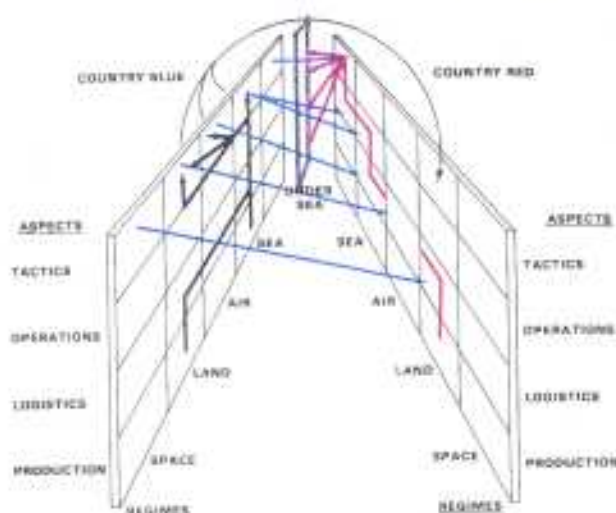


Figure 7

SHIELDS AT SEA

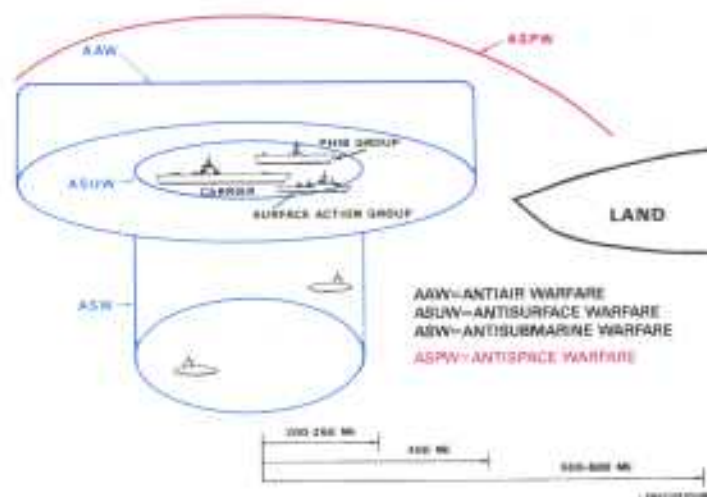


Figure 10

SHIELDS NEAR LAND

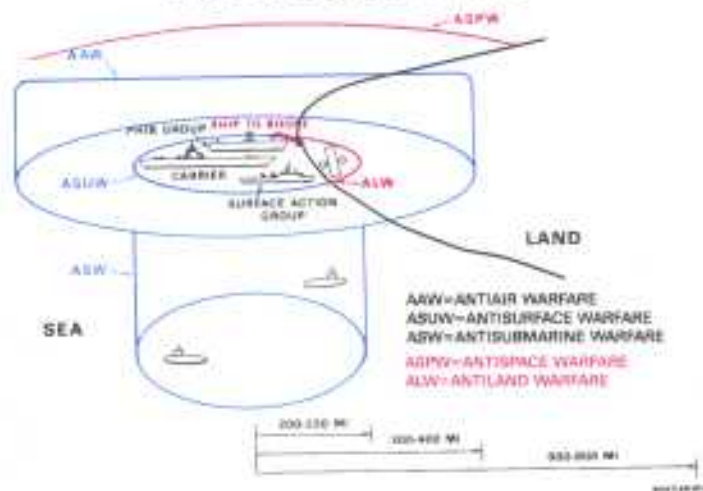


Figure 11

Fighting Theaters

The extended range of vehicles and communications and the increased lethality of weapons have significantly affected the nature of fighting theaters; i.e., the subtheaters in which tactical activity is controlled and synchronized. Forces can be applied over wide areas, thus requiring great coordination. The technical means for this are available, but organizations must be formed to direct the activities of the four Services and the intelligence agencies, then trained and authorized to do so.

There are three types of fighting theaters: maritime, continental, and littoral. A maritime theater is one where the tactical action is mostly at sea, and a continental theater is one where the tactical action is mostly on or over land. A littoral theater, on the other hand, requires balanced action between land and sea; tactical and operational activities in all live regimes must be closely coordinated and synchronized, lest the forces run the danger of being fired on by friendlies or being exposed by gaps in the antiregime shields to the full fury of asymmetric attack.

Littoral theaters are not as well documented as the other two but are steadily growing in importance because, as the fighting theater size and the number of interactions increases, forces operating in separate areas, which could fight relatively independently before, now must cooperate. Coherent campaigning will require not only harmonization of missions and synchronization of tactical activity in all five regimes, but also the direction of operational movement and, to some extent, establishment of mission-oriented logistic priorities. The second of the historical examples that follow, the discussion of the Rabaul Campaign, was chosen to illustrate the many interactions required in a littoral fighting theater.

Historical Examples

The following historical examples are offered to shed light on the interactions between technology, doctrine, and organization. The French experience in World War I and

World War II was chosen to illustrate the effect that combinations of technology changes can have on warfare and to show the difficulty of adjusting thought and actions to new situations. The campaign to neutralize and eventually bypass Rabaul in the Southwest Pacific in World War II demonstrates the evolution of large-scale shields and provides a look at a littoral theater. And a small example from the Arab-Israeli War in 1973 illustrates the application of shielding by small units.

The French Experience

In his award winning book, *The Seeds of Disaster*, Col Robert A. Doughty, USA, chronicles the development of strategic and tactical thought in the French Army from the Franco-Prussian War in 1870 through the early days of World War II. The French attributed their losses in the Franco-Prussian War to a lack of aggressiveness and inability to maneuver. To remedy this, they developed doctrine that emphasized training and elan in the troops, aggressiveness and esprit in the units, and the offensive achieved through mobility, maneuver, and attack. To be fair to the French, the British and German armies were also developed along those same lines. It was believed that success came from aggressive movement and attack.

In the years between 1870 and 1914, steel was improved in quality, poisonous gases were developed, and black powder was replaced by cordite and smokeless powder. The effect was a battlefield dominated by massive artillery barrages, interlocking protective fires from dug-in machinegun nests, and clouds of poisonous gases.

Maneuver doctrine was implemented without thought to providing combat shields. The results can be seen in the casualties sustained in over-the-top, stand-up bayonet charges into such lethal conditions. The doctrine persisted as "the way to win a war" far into the conflict with the result that the young manhood of three nations was nearly destroyed. The French casualty statistics are stunning even viewed from nearly three-quarters of a century away. Out of a military

Maneuver warfare returned with a vengeance in 1940, not with "horse, foot, and artillery," but with "tank, truck, and airplane."

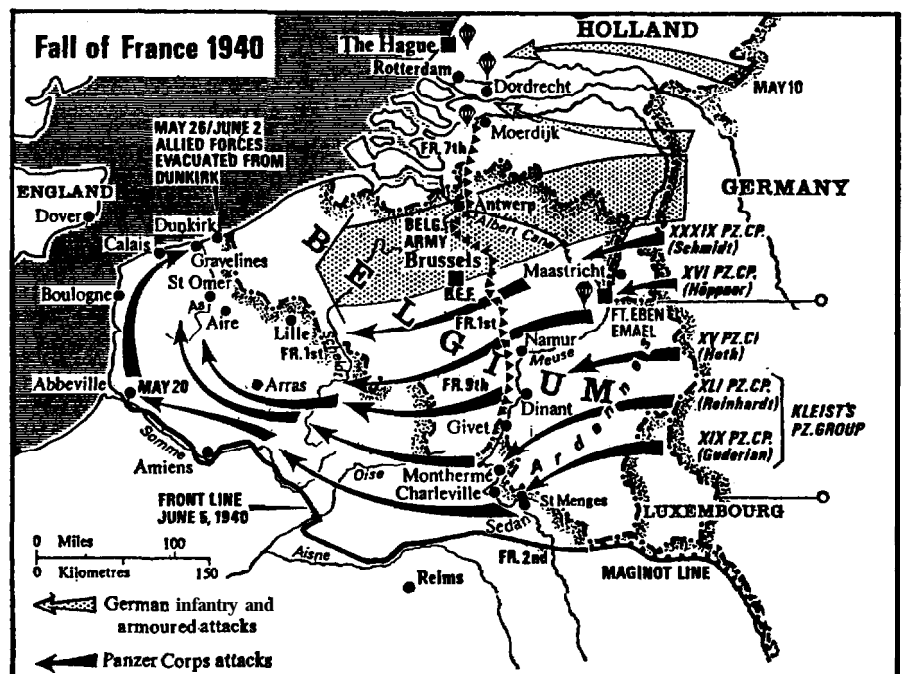
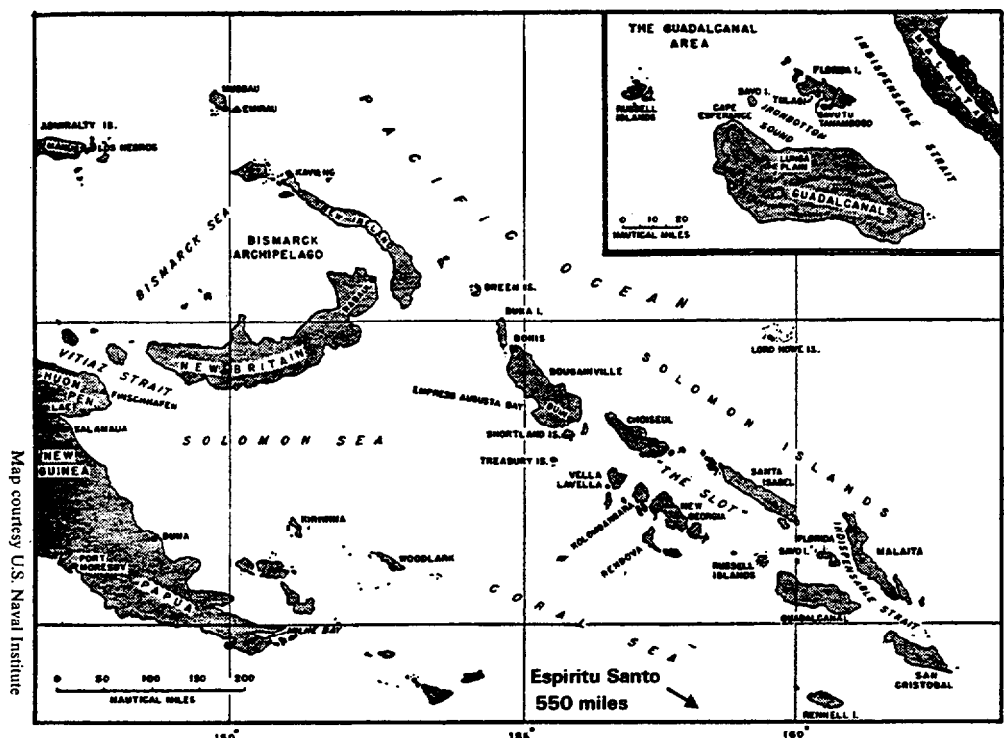


Figure 12



Following **Pearl Harbor**, Japan quickly seized **Guam**, **Wake Island**, and **Rabaul** (in New Britain). The **Battle of the Coral Sea** stopped the advance toward **Port Moresby** (in New Guinea).

Fire 13

age population of 13,350,000, France mobilized 8,410,000. Of these 1,382,400 were killed or missing, another 3,549,880 were wounded. In all, nearly 60 percent of the army and 35 percent of the eligible population were casualties.

Eventually, the Allies moved to a doctrine of methodical warfare and, in the terminology of this article, mutual shielding. This, plus the appearance of the tank late in the war and the entry of the United States, turned the tide. And because methodical warfare was successful, it became, to the French, *the way to think about war*.

In the *interwar* years, a “methodical warfare” strategy evolved in which the fortifications in the north and east would sustain early assault and extract high casualties. Later the forts would serve as the fire base for maneuver forces, which would advance deliberately with rolling artillery and tank support, to retake lost territory and control penetrations. The Ardennes Forest to the east was considered impenetrable by a large force.

But between the wars three major technology advances changed the picture. The efficiency and power of the internal combustion engine, advances in aircraft design, and improvement in wireless radio combined to change the size of the land battle area by at least an order of magnitude, not just in the tactical sense that the airplane could extend the range of artillery by 10 times or more, but also in the operational and logistic sense in that, by 1939, the capability existed to move, sustain, and direct land forces over an area 10 times as big as before.

Exploiting these changes with blitzkrieg organizations, doctrine, strategy, logistics, and tactics, the Germans traversed the “impenetrable” Ardennes Forest (Figure 12), flowed around the “impregnable” forts of the **Maginot Line**, and appeared in the French rear areas in such force that the Battle of the **Maginot Line** was never really fought. The French were soon out of the war, and the British left the continent at **Dunkirk**. Thus maneuver warfare returned with a vengeance, not with “horse, foot, and artillery” as in 1914, but with “tank, truck, and airplane.”

Before leaving the French example, it is worth noting that the concept of methodical warfare was not wrong per se; nor were the French unaware of tanks, and trucks, and air-

planes, and wireless radio. The difficulty came from overestimating the problem of traversing the Ardennes Forest and from trying to fight from fixed locations with well-prepared shields but with limited maneuver capability. The technology combinations permitted much wider maneuver to include movement of the shields as well as the main force. The next example, which is half a world away and two years later, but still in the same technology timeframe, illustrates why discarding methodical warfare concepts would be tantamount to throwing out the baby with the bathwater.

The Reduction of Rabaul

The campaign to reduce and eventually bypass the Japanese bastion at Rabaul occupied Adm Nimitz, Adm Halsey, and Gen MacArthur from June 1942 until February and March 1944 when Green Atoll to the southeast and the Admiralty Islands to the northwest were finally secured.*

To set the stage (Figure 13), you will recall Japan moved in very quick order from the attack on Pearl Harbor and Manila to seize Guam, Wake Island, and Rabaul (February 1942). By May of 1942, the Japanese were threatening Port Moresby in New Guinea and Australia. They were also preparing to seize Midway and Espiritu Santo. The Battle of the Coral Sea (May 1942) disrupted and, in the end, stopped the advance to the southwest toward Port Moresby. The Battle of Midway (June 1942) stopped the advance to the east. The advance to the southeast continued, however, with the attempt to build an airfield on Guadalcanal, some 500 miles down the island chain, a move which would have put the Japanese within striking distance of Espiritu Santo and the supply lines to Australia and New Zealand. The urgency for the “come-as-you-are” assault on Guadalcanal on 7 August 1942 is understandable considering the alternatives.

The landings were made to deny the Japanese the use of the airfield. Using regime/aspect/mode/shield terminology, the purpose of the action was to create an **AAW** shield for Espiritu Santo. The action was accomplished by land forces moving to the battle along a path at sea. By the afternoon of

* Samuel Eliot Morison provides a balanced look at these actions in volumes V and VI of his *History of U.S. Naval Operations in World War II*.

Figure 14. LtGen Robert L. Eichelberger commanded the U.S. Army's I Corps in New Guinea and achieved one of the first major ground victories in the Southwest Pacific campaign in taking *Buna* and *Lae*.



8 August some 11,000 troops had gotten ashore, easily overwhelmed the Japanese force that numbered no more than 2,000 and most of them labor troops, and established a perimeter at the airfield. The initial fighting, thus, was in the land vs. air logistic asymmetric nontactical mode.

With the Marines on inside lines, under a denial strategy, and with the opportunity to dig in, the correlation of forces ratios shifted from 3 to 1 against them in the attack phase to 3 to 1 in their favor in the denial phase thus posing the Japanese the immediate problem of fielding a force some 30,000 strong to retake the airfield.

Almost immediately the role of the land forces shifted from one of denying the Japanese Air Force access to the field (AAW shield for Espiritu Santo) to defending the airfield so our aircraft could use it (antiland warfare (ALW) shield for an air logistic installation). The lighting on the perimeter was in the land vs. land tactical symmetric mode, and the paths to combat were by air and sea, and in some cases undersea, before the last few miles on land into the fight.

On Guadalcanal, the crucial days came on the 11th, 12th, and 13th of November 1942. The United States had committed six carriers to the Pacific: *Lexington*, *Yorktown*, *Hornet*, *Wasp*, *Saratoga*, and *Enterprise*. By November, all but *Enterprise* had been sunk or badly damaged, and the 1st Marine Division was facing exhaustion.

The Japanese battleships and cruisers sortied south regularly to shell Henderson Field, but the U.S. surface fleet, though taking heavy losses, was eventually able to form an antisurface warfare shield and deny the Japanese free access to the water offshore. The aircraft and pilots from *Enterprise* joined the Marine squadrons ashore during those critical days. Together they sank or destroyed 11 unescorted Japanese troop transports in actions that reinforced the antiland warfare shield. The mode used was air-to-sea asymmetric nontactical. The Japanese troops, good as they were, had no way to fight back. The annihilation of that contingent as an effective ground force is an example of the danger and lethality in asymmetric and nontactical modes when shields are not in place. Losses of ships and aircraft and people were heavy on both sides, but at the crucial times the U.S. shields were in place, the Japanese shields were not, and that made the difference.

The offensive in the east under Adm Halsey then moved up the islands in a series of shielded steps. The aviation forces generated antiair warfare and antisurface warfare shields behind which the surface ships generated antisurface warfare and antisubmarine warfare shields, all of which allowed the land forces to get ashore. The engineers working behind the antiland warfare shield provided by the infantry, built airfields that allowed the air forces to move forward a step and repeat the process. In the end, most of the action occurred in the shields. A long series of naval actions and landings ultimately culminated in the landings on Green Island in February 1944.

In the west, another very tough campaign was being waged by Gen MacArthur, first in New Guinea, then in the western end of New Britain, and ultimately into the Admiralties Archipelago. The early stages were quite different from the Solomons in that an overland campaign across eastern New Guinea was necessary when the Japanese air forces on New Britain and Rabaul, and very treacherous uncharted in-shore waters, prevented both day and night coastal movement. In effect, the Solomons Sea between the Papua Peninsula and New Britain was a "no man's land" since neither side could control it or traverse it safely. Eventually, after some of the dirtiest fighting imaginable, the U.S. forces under Gen Eichelberger returned to *Buna* and *Lae* (Figure 14).

The 1st Marine Division was assigned to MacArthur and given the task of seizing Cape Gloucester in December 1943. The stage was set then to seize Seeadler Harbor in the Admiralties Archipelago in March 1944. With Halsey's forces on Green Island and MacArthur's on The Admiralties, the antiair warfare and antisea warfare shields clamped together in a cylinder around Rabaul not only preventing Japanese forces from coming out to attack Allied troops but actually denying sea and air units the use of the base. The reduction of Rabaul as a sea, air, and land base was complete. The ships and aircraft were removed and the approximately 100,000 Japanese troops that stayed behind trained incessantly for the land assault that never came.

In both the western and the eastern thrusts careful movement behind vigorous shielding actions characterized the pattern of advance. In other words, methodical warfare, generally credited with causing the French downfall, was

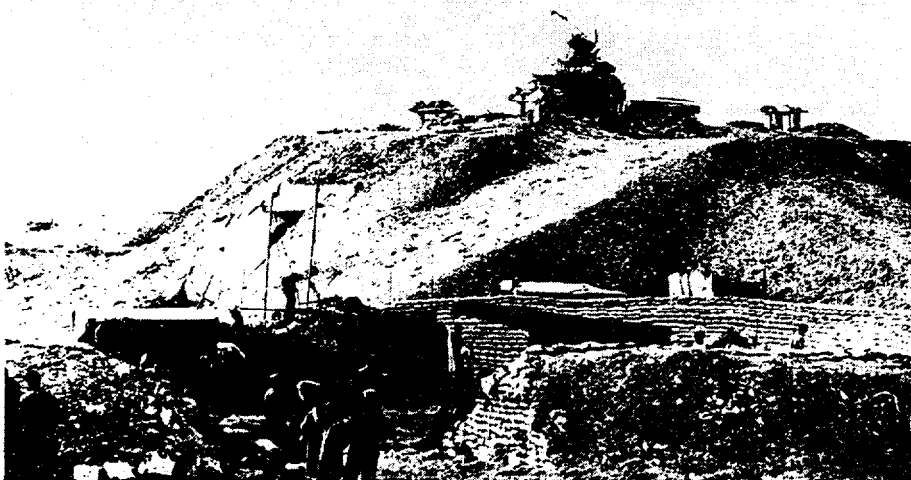


Figure 15. Israeli soldiers take over a captured Egyptian surface-to-air missile site.

successful in reducing Rabaul-but methodical warfare with maneuver that took advantage of asymmetries to develop shields in all regimes and, perhaps most important of all, with common operational purpose.

While these campaigns in the South Pacific are good examples of asymmetric combat, shielding actions, and littoral theaters, the reader should not infer that either one was a model of organization or doctrine. Both campaigns taught many painful lessons that, to our wartime leaders' credit, were assimilated in the command arrangements, coordinating procedures, and doctrine in use during the Philippines and Okinawa campaigns and in the air attacks on Japan. The seizure of Iwo Jima was in itself an **antiland** warfare shield action in support of the logistic aspect (emergency landing fields) of the bombing campaign waged by the air forces from the Marianas.

Israeli Cross-Canal Operations

The third example is taken from the Arab-Israeli War in 1973 and is much smaller, but it serves to illustrate the power of thinking in terms of shields and asymmetries, and choosing tactics and strategy accordingly.*

* Avraham Adan's *On the Banks of the Suez* contains a good account of this action

The Israeli Air Force had sustained shocking losses in the first few days of the war, mainly to Egyptian anti-aircraft fire from well-protected missile sites on the western side of the Suez Canal. Israeli cross-canal operations, in themselves bold moves in the face of some obvious military and political risks, clearly changed the ground situation dramatically. What may not be clear is that the Israeli ground attacks (Figure 15) also changed the air situation dramatically.

The action took place on 18 October 1973 (Figure 16). An Israeli battalion sortied northwest from the crossing some 15 kilometers and captured a SAM site that was operating without protection (i.e., without an **antiland** warfare shield), thus was a sitting duck to a tank attack. Using the terminology from the regime/aspect/mode/shield construct, the Israeli battalion performed an attack in a land-to-land symmetric tactical mode. The attack did not further the land campaign, but was very important as a shield protecting the aircraft from land attack. We can consider the action to be close ground support (CGS) for air forces in much the same way as we consider an air attack to be close air support (CAS) for ground forces.

Observations

We should be careful about reaching overarching conclusions from these discussions and examples. The **regime/as-**

The Israeli attack of 18 Oct 1973 did not further the land campaign, but was important as a shield protecting aircraft from enemy SAMs.

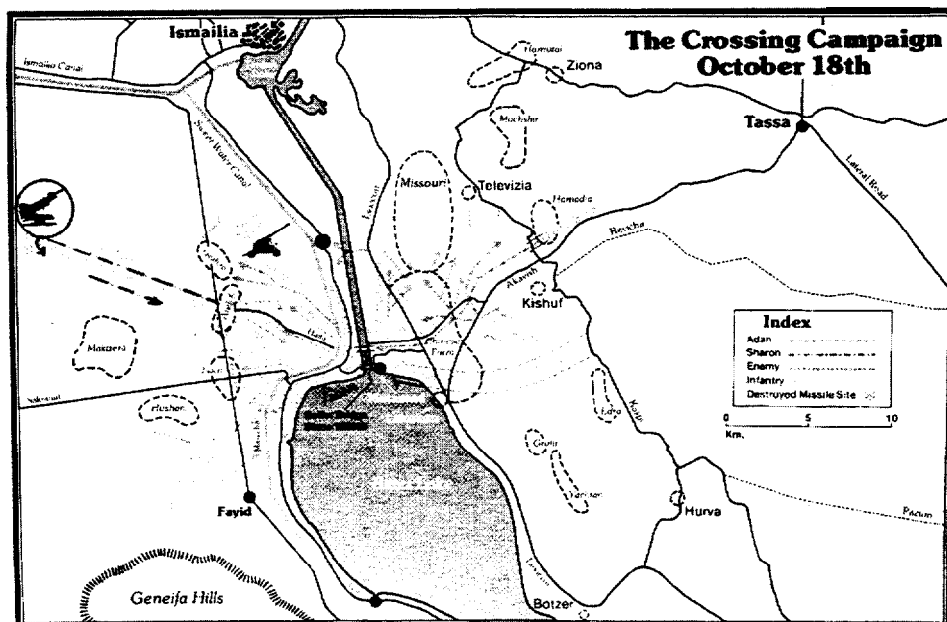


Figure 16



MajGen Schulze

MajGen Richard C. Schulze Memorial Essay

The **MajGen Richard C. Schulze Memorial Essay** honors the memory of the Marine Corps officer for which it is named. **MajGen Schulze**, a native of **Oakland, California**, died in November 1983, two years after his retirement. An enlisted Marine at the time of his commissioning in 1951, he earned his **B.A. in Far East History** from Stanford University in 1954, and later earned an **M.S. in Public Administration** from George Washington University (1971).

He was a mortar section leader with the 1st Marines in Korea and commanded 3d Battalion, 3d Marines in Vietnam.

Gen Schulze served as director of three different divisions within the Manpower Department of Headquarters. He also served as inspector general of the Marine Corps and as commanding general, **MCRD San Diego**. He was a frequent contributor to the *Gazette* and wrote with philosophical insight on many of the intractable problems confronting the armed forces.

The Schulze Memorial Essay⁵ have been published each November since 1984. They are made possible by the earnings of an endowment fund established by friends of **Gen. Schulze** and administered by the Marine Corps Historical Foundation. Authors of the essays are chosen by the editorial board of the *Gazette*.

pect/mode/shield construct has not been seasoned by debate or modeling, and the examples were chosen primarily for illustration. Still, some observations are in order.

The French experience should alert us to the danger of selecting a singular way of approaching combat. It is very difficult for a single Service to avoid selecting a "best way" since resources are limited and each Service wants to use the resources available to provide the greatest combat power. But competing views of combat, though they sometimes cause adversarial relationships between Services, can prevent singular "best way" solutions. The debate between the Air Force and Marine Corps regarding control of tactical aviation comes to mind as a very important discussion to keep alive because some circumstances may require full and closely directed centralized control of aviation while other circumstances may demand close coordination and synchronization of air and ground effort.

The combined campaigns to reduce Rabaul were learning experiences in coordinated land/air/sea/undersea warfare. That the interaction between Services, countries, and headquarters was far from perfect should not detract from the insight we get by studying those actions that were fought largely to shield other forces. In addition, the example illuminates the demanding requirement for continuous harmonization of missions and synchronization of tactical and operational activity in a littoral theater.

The Israeli action gives us a guide to planning the day-to-day action of a campaign. In this case, the lesson is not in the close coordination of air and ground forces (in fact, that was not an Israeli strength), but in the assignment of a mission to land forces primarily to shield air forces, not to take key terrain or to destroy opposing land forces.

The Rabaul Campaign and the Israeli cross-canal conflict both provide powerful insights into fighting outnumbered and winning:

- From the action to seize and hold Henderson Field. Use your maneuver capability to go quickly to an area where your enemy is weak, but which he can't ignore. Then take advantage of terrain and asymmetric shields to shift the local correlation of forces in your favor. Force him to move toward you and be prepared to attack him with any means available while he is moving.

- From the Israeli attack of the missile site. Strip away your enemies defending shields. Use your forces in asymmetric modes to systematically reduce his forces where and when they are most vulnerable. If you must fight symmetrically, use your maneuver capability to achieve high local correlation.

Although it would be comforting to think that, by using regime/aspect/mode/shield analysis and wargaming various cases, we could forecast future warfare, this is almost certainly not the case. The totality of military, political, economic, and social assumptions that must go into such forecasts are too large and too complex, and the historical record is too full of failures and surprises to sustain such a hope. It almost certainly will be the case, however, that we will be better prepared for combat if we use regime/aspect/mode/shield analyses to assess the threat, both symmetric and asymmetric, and use the knowledge to build combat shields to protect our forces.

Considering the situation in the Persian Gulf today where there is a growing threat to ships from small speedboats, it may not be desirable or even possible to develop a similar speedboat for defense. But attack helicopters might be just the ticket to stop the speedboats out of lethal range. Following our previous notation, the action would be in the air-to-sea asymmetric nontactical mode used to create an antisurface warfare shield. We might call it close air support for ships.

Words are essential to the process of thinking. If you don't have a word for it, you can't think about it. If you have a word but there is no agreed meaning, you can't communicate your ideas to someone else. The regime/aspect/mode diagrams and the shield sketches are designed to encourage the search for new words and ideas, and to discourage the search for "the very best way," which then supersedes all others and, in **Col Doughty's** words, "sows the seeds of disaster."

The cover of the Army Field Manual on training in use in the late 1940s contained the following quote from The Honorable Robert Paterson, then Secretary of War: "A brave man is not afraid of anything, not even a new idea." Men and women with this kind of bravery have always been in demand, but never have they been more valuable than in these times when warfare is changing so rapidly. **USMC**

The Value of Timely Cooperation

By Lieutenant General Philip D. Shutler USMC (ret)

Marine Corps Gazette August 2002

The Value of Timely Cooperation

by LtGen Philip D. Shutler, USMC(Ret)

The gap between being on time and late is thin but important to success.

Everyone is familiar with the value of a timely helping hand. When you are tying up a big package an extra finger on the knot keeps the ring tight, if the finger is available at the time. If you are going to the airport to catch a plane, the taxi driver that picks you up on time and gets you to your plane on time with no hassle at the gate gets full marks. You might grade the driver's performance as shown in Figure 1.

In military affairs, timely cooperation is not new by any means. From a personal viewpoint, virtually everyone who has been in the Service knows the meaning of "hurry up and wait." The waiting is to permit you to do your part in a timely way with what others are doing. History is replete with anecdotal examples of cooperative actions being taken on time to

provide the margin of success. But the histories of the tactical actions seldom record the trail of events that lead to the ability to cooperate. There just isn't enough flash and fire and human interest to make it into articles and books that editors insist, rightly enough, must capture and hold the readers' interest.

But for future campaign commanders an understanding of the processes, actions, and decisions that lead up to and permit timely cooperation is essential. The purpose of this article is to explore the process of cooperation with a view to its use by future leaders to achieve objectives quickly and to minimize casualties.

The Extent of Cooperation

Today we make war in five very distinct regimes: space, land, air, sea, and

undersea. The technical advances of the past few decades have produced sensors, communications, weapons and vehicles to include spacecraft, tanks, aircraft, ships, and submarines that make any combat potentially much more lethal, wide-ranging, and fast-paced. This is particularly true in littoral theaters of war where threats—and, of course, opportunities—in all regimes coincide.

It is useful to differentiate between actions taken to help other forces in the same regime—symmetric cooperation—and actions taken to help forces in other regimes—asymmetric cooperation. Actions taken by forces in one regime can be accomplished in a way that is cooperatively helpful to forces in the same regime or any of the other regimes. The full range of possible cooperative actions is shown in Figure 2.

The full nature of cooperation can be appreciated when one considers there are 25 discrete forms displayed in the provider/receiver array, and in each form there are at least 5 types of tasks. It is up to commanders and staffs to cause those cooperative actions to occur at the most advantageous times. In some cases this can be done by ordering one unit to support another in the formal supporting/supported sense. Most of the time, however, the orders go directly from the commander to each subordinate unit. One could think of this as orchestration. The oboes don't "support" the violins; instead, the whole orchestra provides an entertaining number, each instrument doing its part with very precise timing. The plan for music action is the "score," and the result is the piece of music as heard by the audience.

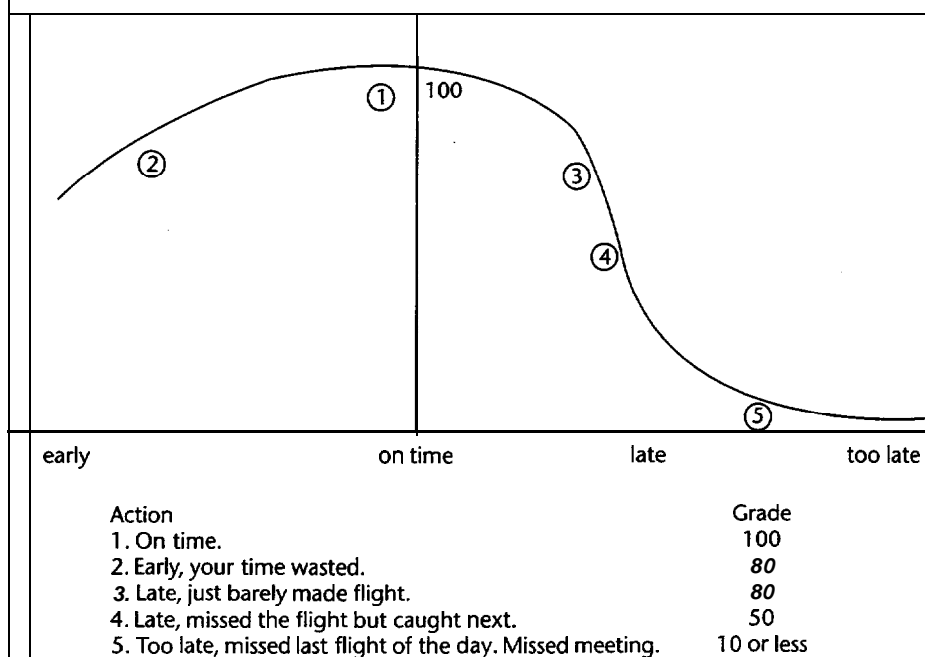


Figure 1.












R E C E I V E R	Provider	Space	Land	Air	Sea	Under-sea
	Space					
	Land			  		
	Air					
	Sea					
	Undersea					

Figure 2. **Provider/Receiver** chart.

A few examples may help explain the use and show the power of the array.

Action:

- | | |
|---|-------------------|
| (1) Fighter/escort of bombers (air helping air). | A/A (symmetric). |
| (2) CAS (air helping land). | A/L (asymmetric). |
| (3) Submarine firing cruise missile in suppression of enemy air defense (undersea helping air). | U/A (asymmetric). |

The above actions are examples of weapons delivery on target. There are four additional major categories of cooperation:

- Intelligence gathering and distribution.
- Logistics support.
- Transportation.

An example of intelligence gathering and distribution is found in the actions of the land unit during CAS. The land unit locates the enemy and transmits this information to the forward air controller to the pilot.

- | | |
|--|-------------------|
| (4) Land providing target information to air (land helping air). | L/A (asymmetric). |
|--|-------------------|

Another example would be forward observers providing information to artillery

- | | |
|--|------------------|
| (5) Land providing target information to land (land helping land). | L/L (symmetric). |
|--|------------------|

Logistics assistance can be provided in many ways. One fairly common example is the ship maintaining vehicles and feeding embarked Marines.

- | | |
|--|-------------------|
| (6) Sea providing logistics assistance to land (sea helping land). | S/L (asymmetric). |
|--|-------------------|

Transportation examples abound. Almost no Service takes itself to war. Airlift of troops is one prime example; sealift of fuel for aircraft is another.

- | | |
|---|-------------------|
| (7) Air providing transport for land (au helping land). | A/L (asymmetric). |
|---|-------------------|

- | | |
|---|------------------|
| (8) Sea moving aircraft fuel (sea helping air). | S/A (asymmetric) |
|---|------------------|

Communications relay can be accomplished by forces in any regime, but perhaps the most far-reaching examples are the relay satellites in space relaying messages to ships at sea.

- | | |
|---|--------------------|
| (9) Space relaying messages to sea (space helping sea). | SP/S (asymmetric). |
|---|--------------------|

Sometimes the military “score” may be very precise and formal as in a symphony. At other times, the “players” may improvise as in New Orleans jazz. But even that will be performed on patterns, habits, and shared objectives.

The Process of Cooperation

How then are these acts of cooperation so essential to military success to be accomplished at the most useful times? They can’t be conjured up on the spur of the moment; careful preparation must be made ahead of time, even though reaction time in combat may be measured in seconds.

There are four major considerations in cooperation. The helping unit must:

- Be there.
- Be aware.
- Be ordered.
- Be capable.

Be There

To be there the helping unit must either be based close enough to get there in time or be loitering in a combat ready position. This is true for all cooperative actions, but it is perhaps easiest to understand when analyzing aviation as the helping force.

It is quite reasonable to assume that flight time is limited by outside factors such as spare parts, fuel, or pilot fatigue. We can establish an initial distance (d_0) where a given number of aircraft (AU) can deliver a representative delivery rate in tons/day (L_0)^B, shown in Figure 3. Then, if the distance to the target is halved, the delivery rate can be doubled because the sorties/day can be doubled. At some point the assumption breaks down, however, because the turnaround and cycle time is dictated by the capability of the base or ship. Thus, delivery capability for short distances is dictated by the capability of the source.

This would appear to suggest moving the aviation base as far forward as possible, but that would probably make the base or ships vulnerable to attack. So another more useful way to look at the same idea is to consider the delivery requirement as fixed for a particular mission (L_0) and allow the required number of aircraft to vary with distance as

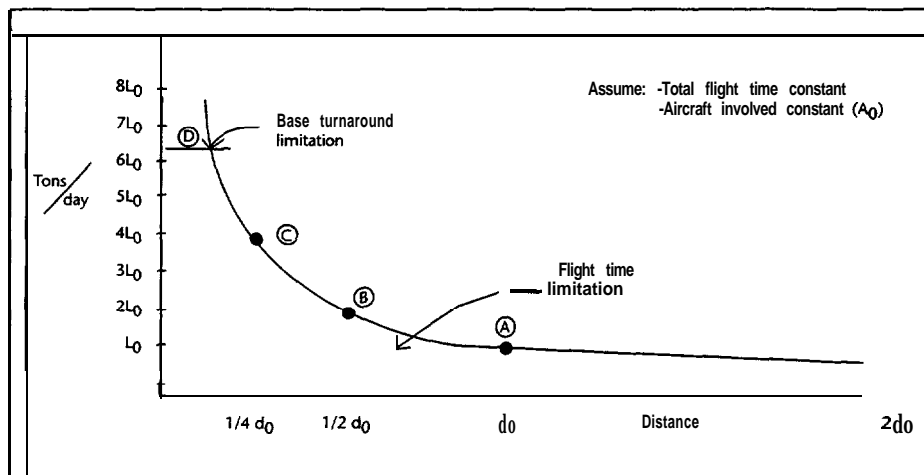


Figure 3. Variation of delivery rate with distance.

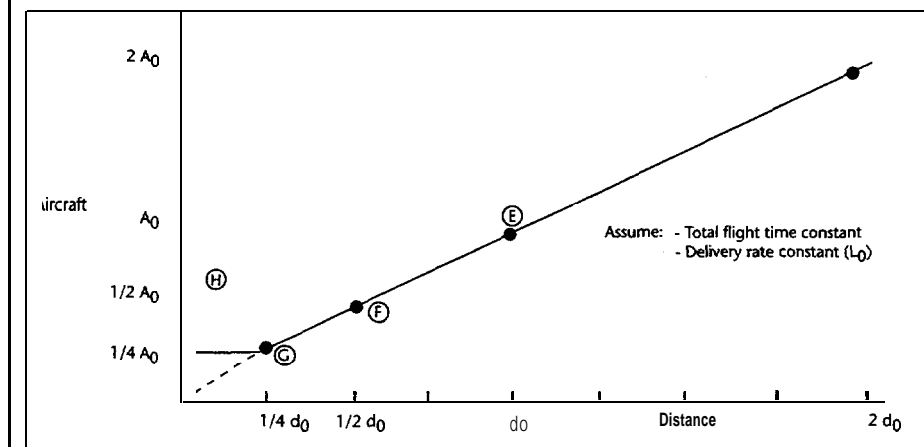


figure 4. Variation of aircraft required with distance.

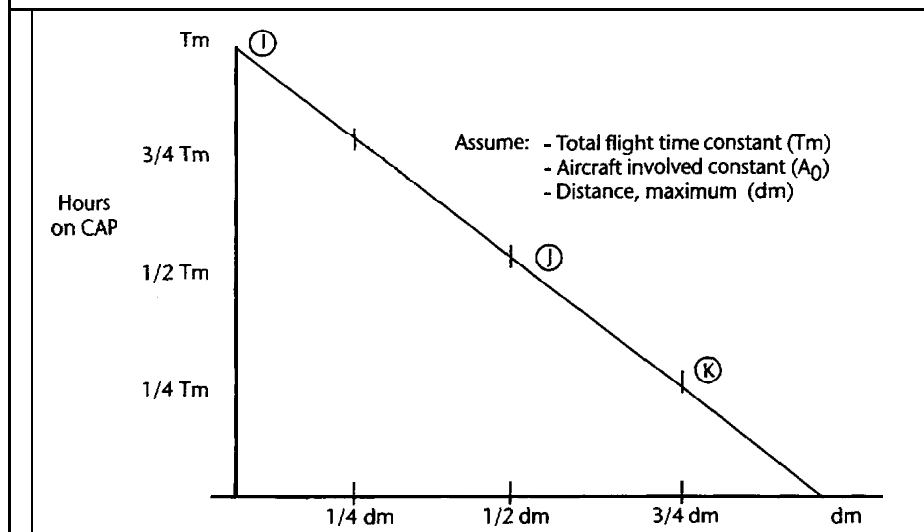


Figure 5. Variation of time on station with distance.

own in Figure 4. In this case we could assume that a delivery rate of L_0 tons/day at a distance d_0 from the base is the appropriate action, and this can be accomplished by A_0 aircraft.^F Then halving the distance from base to target requires half as

many aircraft. The number of aircraft diminishes until the turnaround cycle capability is reached and flight time can't be sustained.

This time the closer one gets to the target the fewer aircraft are needed. A very small number of aircraft in

an operational (not maintenance) base close to the target can do the job of a much larger force farther away.

Sometimes to meet response times it is necessary to put aircraft in combat air patrol positions. For this the key factor is time on station (TOS). To the first approximation the TOS is diminished by the time coming and going which is proportional to the distance from launch point to orbit point. This is shown in Figure 5.

Once again, if we assume that the necessary cap time and density is fixed then the number of aircraft required to cycle into the orbits is shown by the curve in Figure 6. Here A_0 aircraft can provide adequate TOS directly overhead.^M

By inspection, since the TOS is cut to $1/2$ at the halfway point, twice as many aircraft would be required and, similarly, at the $3/4$ th radius four times as many aircraft are required.

There is a special case of this. If the aircraft can be based close enough for deck launch-for close air support (CAS), for example-rather than being kept airborne, the total forward force goes down dramatically. When two aircraft are needed on an air alert station at three cycles per day, a total of six aircraft would be flown. If deck launch gets the job done in time, two aircraft on deck alert substitute for six airborne alert sorties.

The dramatic effect of positioning the source of help close to the unit needing help can be seen by the drastic reduction of aircraft needed when forward positioned, particularly when close enough for deck alert. Though the analytics are not as straight forward as for the air effort required, the principle applies in other regimes as well: an adequate force must get there in time and stay long enough to complete the task.

Be Aware

To be aware the helping unit must receive a flow of information not only about the enemy situation generally, but specifically about the enemy, friendly, and neutral situation at the time the action is needed. This demands direct unimpeded communications from the receiver to the provider. Creation of the sen-

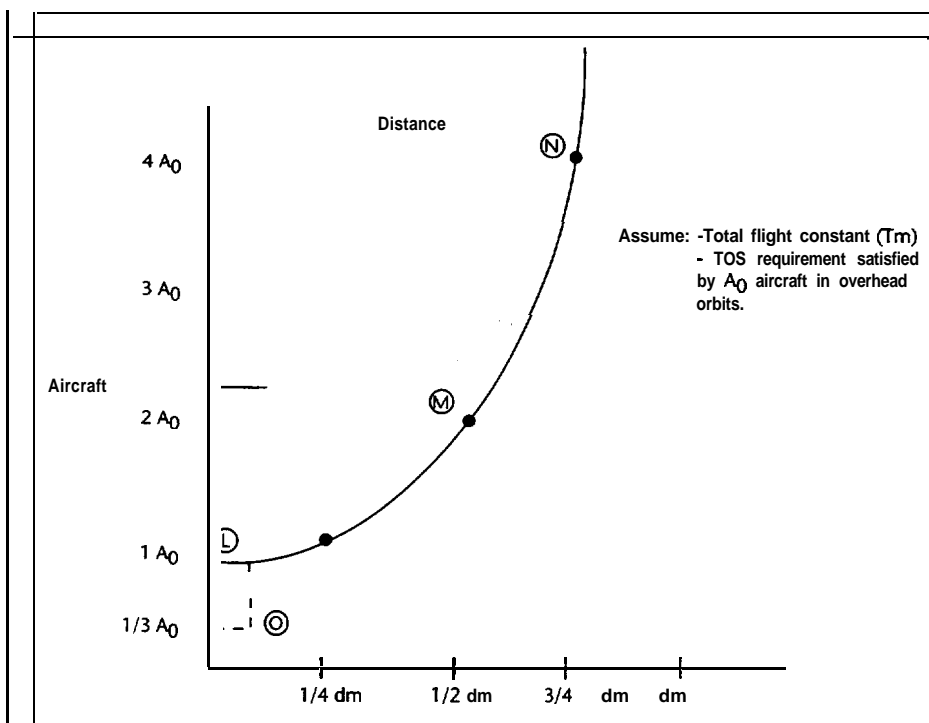


Figure 6. Variation of aircraft required with distance.

r positions, relay of the information, assessment to produce useful intelligence, and transmission to the pr
mplex than a forward air controller pilot overhead. Nonetheless, to prosecute a campaign in a littoral theater, the prepa for many provider/receiver relationships. Some of these can be pa plan, advance to accommodate environmental changes and sudden enemy initiatives.

Be Ordered

It is quite possible for a very capable unit to be nearby and aware of the need for help, but if not ordered to take the action, it can't and must not do so. The relationships created by supporting/supported directives n reduce reaction times but are often quite rigid, so the supporting unit is not available to do something else which may have higher priority. The larger body of cooperation is accomplished by the senior commander issuing orders to a provider unit, having coordinated the action with both receiver and provider. A third method to ensure timeliness is by creating small special purpose joint task forces that meld all of the neces-

sary capabilities in the same command for a relatively short time. The ous ready group is an example. There are many situations, however, minutes and sometimes seconds. One approach is the current Marine being pioneered by the Marine Corps at Quantico. Fleet units have used such techniques for many years, but in view of reduction in response time in littoral theaters, it may be space-land-air-sea at least for a short time, of all 125 activities of cooperation.

Be Capable

In the final analysis, if the cooperation is to be successful the This means, first and foremost, that the people and units involved must cooperative way. For example, CAS is a specialized form of strike warfare. strike aircraft could be used. The effectiveness of the actions of cooperation age done to the enemy but also on the timing and appropriateness of the result as seen by the receiving unit. Training and preparation of the people in-

tive action are more important than the equipment.

ble" category is the ability of the commander, with emphasis on the

direct and execute cooperative engagements. This requires forming the special task forces, training them, and creating capable watch teams in the operations centers to influence

A third factor is the long-term preparation for cooperation. If spe-

the future, the building blocks of organization and specialized equip

brought into being. Organizations such as air control squadrons, air

ing units, beach control groups, and staff control cells must be developed

the nails, screws, and glue that hold the house of cooperation together.

Suggested Action

It is suggested that the potential for cooperative actions and the orga-

potential be studied at the major commands and war colleges with a

as it can be exercised at present, to state the types of organizations and equipment needed to take advantage of present and near-term capabilities, and to project future coopera-

means to satisfy them.



>LtGen Shutter is a senior fellow at the Center for Naval Analyses (CNA), entered the Marine Corps in 1947 and retired in 1980 as Director for Operations (J-3), Joint Staff. He fought in Korea on the ground as a member of Reconnaissance Company, 1st Marine Division and in Vietnam in the air flying F-4s in 1st MAF. He was CO, MAG-31 and CG, 4th Marine Amphibious Brigade. He served in aviation development positions as class desk for EA-6 aircraft and Deputy Chief of Staff for Aviation at HQMC.

>>The views represented herein are those of the author and not those of CNA.

The Brigade Is Back!

By Lieutenant General Philip D. Shutler USMC (ret)

Marine Corps Gazette September 2002

The Brigade Is Back!

by LtGen Philip D. Shutler, USMC(Ret)

Once again the concept of Marine brigades is 'back in the news.'

The reason the term **Marine expeditionary brigade (MEB)** is back in the lexicon is very simple. The current Commandant of the Marine Corps, Gen James L. Jones, saw that the term Marine expeditionary force, forward (MEF(fwd)) was not well understood and acted to replace it with a traditional term that *is* understood. The possible ramifications of the name change, however, go well beyond a simple line in/line-out change to current publications. While the MEB (14,000 personnel), an airground task force *one-third* the size of the MEF (44,000 personnel), will still be a forerunner to the commitment of the full MEF, its capability to function as an integral component of a numbered fleet is the feature that holds the most promise.

The origins and history of the MEB illuminate possible future development. While the use of a Marine brigade in combat goes back to the 4th Marine Brigade within the American Expeditionary Force in France in World War I, it was not until after World War II that the concept of the brigade as an air-ground team came into being. The 1st Marine Brigade, when it was deployed to Korea in July 1950, consisted of the 5th Marine Regiment (Reinforced) and elements of the 1st Marine Aircraft Wing (1st MAW). BGen Edward A. Craig and Thomas J. Cushman extracted a commit-

ment from GEN MacArthur that they would, indeed, fight as a team. This was the case where the brigade was committed in the Pusan perimeter even when the Marine squadrons were aboard the escort carriers. When the 1st Marine Division (1st MarDiv) was involved in the Inchon landing, the escort carriers again provided close air support, and 1st MAW established a foothold ashore on the 19th of September, just 4 days after the landing. When the 1st MarDiv was moved to northeast Korea, 1st MAW went to airfields at Wonsan and Hungnam. During the Chosin Reservoir campaign, when the division was involved in a desperate fight to get out

of the trap set by the Chinese, the wing was only about 60 miles away and, thus, *could* launch from hot pad and be on station in about 15 minutes and, if not immediately needed, could orbit for hours waiting for appropriate close air support targets.

To round out the picture, in addition to the Marine squadrons at Wonsan and Hungnam, the carriers of Task Force 77, in an operating location inside of 100 miles from the coast, provided aircraft in support of the Marines. In fact, for the crucial part of the battle the carrier air wings operated *almost* as an integral part of 1st MAW, which directed target assignments and provided positive control

while the aircraft were in the battle area. Approximately half of the airstrikes flown in support of the Marines were Navy aircraft from the carriers.

After the Chosin Reservoir campaign, the Eighth Army assumed tactical command of the division, and Fifth Air Force did the same for the wing resulting in the team being broken up, contrary to the commitment made to BGen Craig. Senior Marines saw this as the cause of unnecessary casualties and vowed "never again."

Following the Korean War the Marine Corps organized for combat in Marine air-ground task forces (MAGTFs). A MAGTF is composed of four elements:

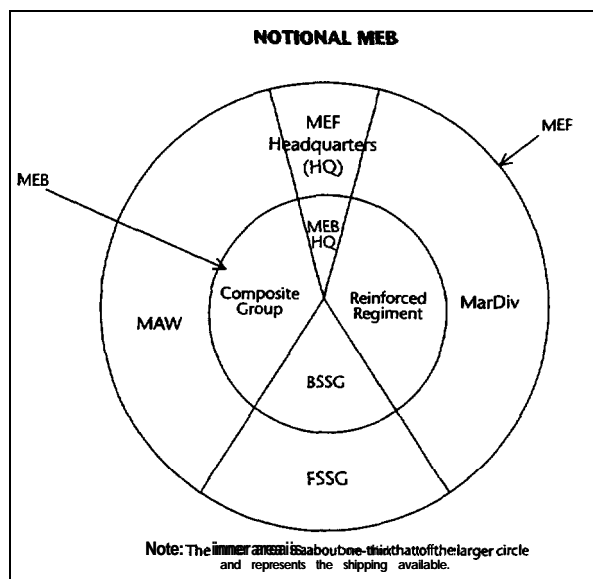


Figure 1.

- . A command element.
- . A ground combat element.
- . An aviation combat element.
- . A combat service support element.

The largest of these is the MEF, consisting of a **MarDiv**, a MAW, and a force service support group (FSSG) (44,000 personnel and about 2 carriers worth of aircraft.)

The smallest is a Marine expeditionary unit (MEU), consisting of a reinforced battalion, a composite squadron, and a MEU service support group (2,200 personnel). The MEU may deploy a detachment of Harriers, but it does not have a representative slice of the MEF in that there are normally no fighter-attack aircraft, electronic warfare aircraft, or air control units, and very little artillery or armor.

In between the MEF and the MEU is the MEB which consists of a reinforced regiment, a composite Marine aircraft group, and a brigade service support group (BSSG) (14,000 personnel) including an appropriate percentage of artillery, light armored vehicles (LAVs), helicopters, fixed-wing aircraft, and air control units. When deployed ashore the MEB can have about one carrier's worth of tactical aircraft.

Three factors contribute to the sizing and composition of a MEB. First, a reinforced regiment is about **one-third** of a MarDiv and a composite aircraft group about one third of a MAW. Second, the mission assigned prior to embarkation will determine what should be included and what should be left out or **minimized**. Third the available shipping will dictate the size of the brigade that can be embarked. When there are opposing arguments as to the size, the available shipping always prevails.

When embarked, the MEB becomes the landing force of the numbered fleet. Before an amphibious landing is ordered, the brigade commander (commander, landing force (CLF)) works for the fleet commander directly. Once a landing is laid

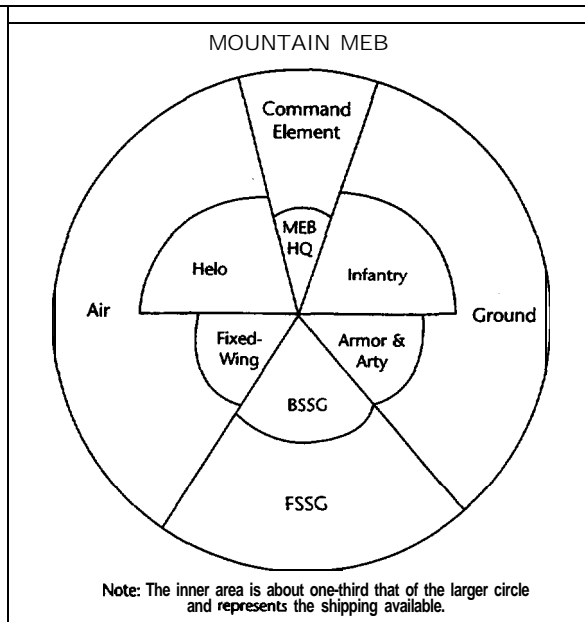


Figure 2.

on, by current doctrine the CLF works for the commander, amphibious task force (CATF) in the now traditional CATE/CLF arrangements. When established ashore CLF can be directed to report back to the numbered fleet commander and remain a subordinate element of the fleet.

The MEB and amphibious groups-indeed the entire numbered fleet-can be transformed to accomplish a very wide range of missions by changing the composition of the MEB and adjusting the form of internal organization. This is not, by any means, new in concept. Marine units

have for years been identified within naval task forces as **numbered** elements. The elements are combined to adjust not only the fighting capacity, but also the command and control arrangements to best accomplish assigned missions and tasks. What is new is the extended reach and controllability offered by new vehicles (V-22s, advanced amphibious assault vehicles (AAAVs), LCACs) and communications (computers, satellites, Internet). In addition, Harriers (AV-8Bs) can now, and Joint Strike Fighters will in the future, permit a wide range of basing for tactical aircraft both at sea and ashore.

In Figure 1 the area of the small circle represents the shipping that is available. As it is shown here, the area of the smaller circle is about one-third the area of the larger circle. A notional MEB would be composed of MEF units and capabilities in about the proportions in the inner circle, a reflection of all of the capabilities of the MEF, but one-third as big.

It is possible, however, given advanced information on the nature of the mission, to tailor the composition of the MEB by loading less of one capability and more of another. Figure 2 shows a conceptual allocation of shipping for a MEB assigned to operate in a mountainous area-say Norway. Infantry companies and helicopters would be beefed up, while armor and heavy artillery and fixed-wing aircraft would be lessened. If a brigade is to be configured for operational maneuver from the sea/ship-to-objective maneuver (OMFTS/STOM) operations, even more of the space would go to the helicopters since they must bear the brunt of logistics transport as well as tactical movement.

Figure 3 shows a conceptual loading allocation for a mechanized MEB to operate in relatively level open country-say Denmark, Kuwait, or Saudi Arabia. Here shipping allocation would go to the tanks and mechanized vehicles at the expense of helicopters and infantry.

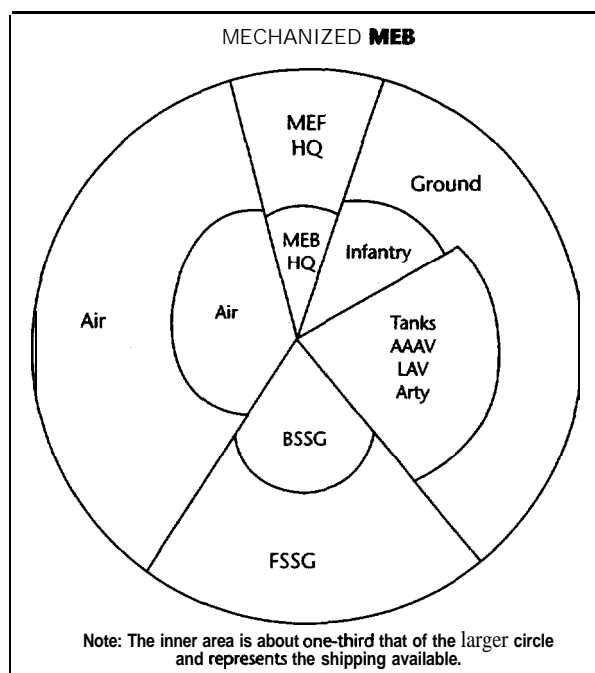


Figure 3.

Figure 4 shows a MEB optimized for aviation. Fixed-wing aircraft are emphasized and other elements reduced to the force necessary to seize or hold the airfield and the overland approaches from the sea. Recalling the early days of World War II in the Pacific, you might call this the "Guadalcanal MEB."

The recent commissioning of the 4th MEB (Antiterrorism) (4th MEB (AT)) is an example of the versatility of the brigade form of organization. By bringing all of the activities involved in countering terrorism into one operational command, the Marine Corps offers the President and Secretary of Defense and each theater commander a centralized place to go for operational antiterror forces.

The leadership and staff will be at least as important as the forces attached. Experts from any field necessary—medicine, transportation, explosives, language, religion, politics, etc.—can be assigned temporarily to interact with the commander, staff, and troop units. Modern communications being what they are, such experts could mobilize the knowledge resources of the entire country to cope with problems that may arise. 4th MEB (AT) can operate "with a foot at sea," a trait it shares with other MEBs, but it can also be task organized to operate with other ground and air organizations, as well as attach to itself specialized units of other Services or government agencies.

Inherent in all of these MEBs is the ability to create a lodgment as the first step in a littoral campaign. Despite the intention to do away with the traditional buildup ashore and to move rapidly to tactical objectives as stated in OMFTS/STOM, there must be a reason for going to that particular part of the world in the first place. That reason almost always is to create a safe enough lodgment to operate a port and an airfield and some form of motor park. It is not necessary to create "mountains of iron" by dumping 60 days of supply on the beach, thus creating easy to detect missile targets. By use of vertical and short takeoff and landing aircraft, the force can

operate from small, dispersed airfields and supply points, some of which probably would be located near a beach offload point. Often the beach offload points can be small and dispersed as well, permitting forward area refueling points and combat service support detachment areas—not mountains of iron but "anthills of iron"—positioned precisely where needed, on the beach or inland, to support the combat action.

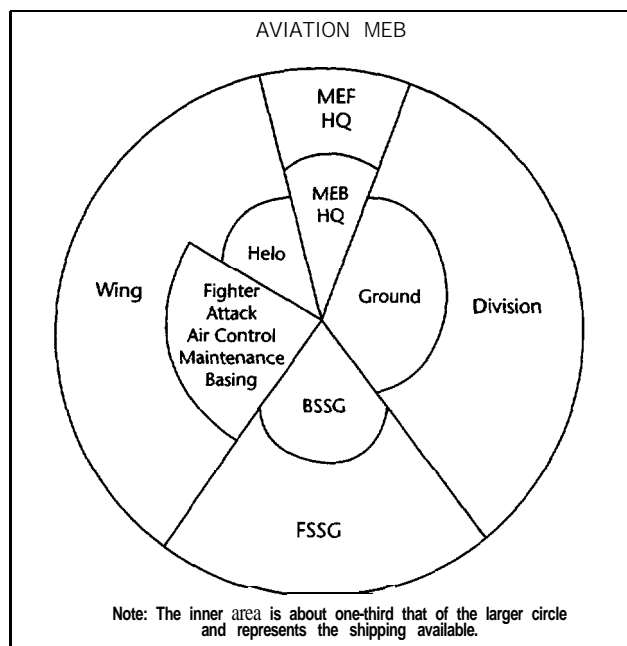


Figure 4.

Once the malleability and versatility of the MEB is recognized, the forms are not limited to those mentioned. For instance, when tactical ballistic missile defense (TBMD) can be achieved by the Aegis system, the "fleet with a foot at sea and a foot ashore" could use a TBMD MEB as a modern version of the aviation MEB that served so well when aircraft were the primary threat to a lodgment. If, indeed, Aegis becomes the preferred technology of missile defense, it seems possible to package it in containers and to create a movable system ashore to complement the mobile system at sea.

When the lodgment ashore is secure enough to accept transport aircraft or ships, the composition of the brigade can be altered by bringing in the troop units and equipment to transform it into another form of brigade, or more likely, a buildup to a MEF will take place with subsequent

operations ashore under the local area theater or joint task force commander.

The numbered fleet with a MEB is far more versatile than a fleet without a MEB. The capacity to influence and control events at sea, in the littorals, and on land is multiplied many times. Likewise, the MEB functioning as part of a fleet gains in capability and provides a unique and very valuable asset to the theater commander. Not only does a fleet MEB provide forces ashore but also a precise way to use the firepower from the aircraft, missiles, and guns of the fleet.

The fleet commander can create scores of internal task groups tailored to the missions at hand. Included within these groups are those where the action is primarily or even entirely ashore, and the task group commander could come from the brigade. In each case, the task group commanders, whether Navy or Marine, could control sea, air, and land action with precise purpose and timing to minimize casualties while accomplishing assigned missions. Such was the case during Operation ENDURING FREEDOM in Afghanistan when

BGen James N. Mattis commanded Task Force 58 consisting of two MEUs and two amphibious ready groups.

A new landward dimension can be added to the Navy concepts of cooperative engagement and networkcentric warfare. Similarly, the OMFTS/STOM programs can progress from the concept stage to exercises, demonstrations, and validation as doctrine. And, perhaps most important of all, as the Navy and Marine Corps go in harm's way they can cooperate to the fullest to reduce casualties and damage.



>LtGen Shutler retired in 1980. His last assignment was as Director of Operations, J-3, the Joint Staff. He currently works as a senior fellow at the Center for Naval Analyses (CNA). The comments in this article do not represent the opinions of CNA or the Department of the Navy.

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